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# ABERRATIONAL AND SUBSPECIFIC FORMS OF BRITISH LEPIDOPTERA

BY

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FOR INTERNAL USE ONLY

Volume 1

Rhopalocera Part 1



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Additional Forms: 50.

The markings not yellow but pale fulvous.

All wings carmineous. 1st. Anterior markings distinct of yellow. albinoga form had the spots white, therefore hardly separable.

The apical eye of the forewing containing two white pupils.

The apical eye of the foramin, not purilled with rhios.

The critical eye of the foregoing is noted.

The eye spots on the underside of the hindwing blind, not visible from life.



ab. parvicollata Lamke, Tijdschr. Ent. 1957. 100. p. 432.

The eye spots on the upperside of the wings distinctly reduced in size.

ab. reducta Lamke, Tijdschr. Ent. 1957. 100. p. 433.

The number of eye spots on the upperside of the wings strongly reduced.

ab. antico-excessa Lamke, Lamb. 1935. 35. p. 242.

An extra ocellus or ocelli beneath the main apical eye spot of the forewing, cell 1, being the most usual position. The form is apparently rare compared with the same one in megera.

ab. postico-excessa Lamke, Lamb. 1935. 35. p. 243.

An extra ocellus at the anal angle of the hindwing upperside.

ab. punctata Gussich, Glasnik Hrvats. Prirodosl. Društva, 1917. 29. p. 219.

On the hindwing upperside in the fourth marginal yellow spot, counting from the anal angle, there is a black spot.

ab. eutaeniata Debauche, Lamb. 1928. 28. p. 58.

Forewing upperside showing a complete band of yellow spots in the margin, the spot appearing in cell 3 is not usually in evidence.

Erroneously placed under megera in Seitz Macrolep. I.

ab. marginata Gussich, Glasnik Hrvats. Prirodosl. Društva, 1917. 29. p. 219.

Upperside of forewings with strongly broadened brown-yellow markings. The usual brown-yellow spots form a broad uninterrupted yellowish-white band, also on the outer margin there is a long dark brown spot. Named marginata because of forewing band.

ab. schmidtii Dioszeghy, Nov. Lapok, 1912. 15. p. 115.

The yellow spots in cells 1, 2 and 3 joined to the median cell and the two side spots in the median cell are confluent. Hindwings spots much larger than usual. Underside without markings.

ab. conjuncta Schneider, Polsk. Pismo Ent. (1949) 1950. 19. p. 240.

On the upperside of the hindwings there is a light spot in the median area which is elongated upwards and joins the one on the costal border.

ab. diluta Bubacek, Verh. zool.-bot. Ges. Wien. (1922) 1923. 74. p. (30).

The two dark bands running across the cell of the forewing absent, giving the wing a paler appearance.

ab. latefasciata Lamke, Tijdschr. Ent. 1957. 100. p. 433.

Hindwing upperside with the yellow band before the margin strongly enlarged and only divided by dark nervures, coalescing with the yellow spot at the end of the cell.

ab. postreducta Lamke, Tijdschr. Ent. 1957. 100. p. 434.

Hindwing upperside with the pale spots on the costa and at the end of the cell absent.

ab. saturator Crombrughe, Rev. Mens. Soc. Ent. Nam. 1911. 11. p. 45.

= fusca Hackett, Entom. 1958. 91. p. 114.

Only four yellow spots remain on the forewing. The two lowest marginal ones near the tornus are absent and the two, one above and one below the apical eye, are very small. The yellow band on the hindwing is completely obliterated.

Hackett's fusca is so similar that it would be difficult to draw a line. Fore and hindwings blackish-brown except for two white dots, one above and one below the apical eye, and three other very faint traces of the usual "speckles". Two of these are on the forewings, one on the edge of the discal cell, the other in the central area just above the median vein, the third on the hindwings below the costal margin. Unless the types are seen it would be difficult to know by these descriptions if the two are different.









subsp. oblita Harrison. Cat. Tort. Inq. 1947. . . . .

The race from Dun, Hebrides.

Ground colour above and below much whiter than the . . . . .  
blackish markings above and below definitely blue . . . . .  
marked areas and grooves also here.

Ab. (or local race) drubensis Thomson. Cat. Tort. Inq. 1947. . . . .

Found in form on South-west side of River Gort, . . . . .  
brooded in June. Size considerably larger than the isolated . . . . .  
British localities, and the light markings more prominent . . . . .  
This would appear to be a local race.





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ab. latimargo Stanneshaus. Ent. Ber. (Amst.) 1954. 15. n. 271. fig.

On the upperside of the forewings the dark outer border is strongly reduced, it nearly reaches the apical eye-spot.

ab. postdisconulla Lempke. Tijdschr. Ent. 1957. 100. n. 436.

On the upperside of the hindwings the pale discal band fails.

ab. postannulata Lempke. Tijdschr. Ent. 1957. 100. p. 436.

On the upperside of the hindwings the yellow band along the outer border is reduced to narrow rings around the eye-spots.

ab. reducta Hofer. Soc. Ent. 1940. 35. n. 45. fig. 2.

On the upperside of the forewings the transverse stripe which runs from the costa to the tornus is widened as it nears the tornus and contains three spots of normal ground colour. Hindwings dark fuscous with a narrow fulvous median band which is all that remains of the normal fulvous area, most of the marginal ocelli being obscured with fuscous.

ab. mediolugens Fuchs. Jahrb. Nass. Ver. Ent. 1892. 45. p. 87.

= transfuscata Cabeau. Rev. Mens. Soc. Ent. Nam. 1920. 20. p. 2.

= fascia Trohawk. Vars. Brit. Butts. 1938. pl. 6. f. 3.

The median area of the forewings upperside filled in between the transverse lines with brownish or blackish, forming a dark band from costa to the inner margin. Fuchs's example was a ♂, Cabeau's a ♀, the latter naturally shows a broader band.

ab. dentata Crombrughe. Rev. Mens. Soc. Ent. Nam. 1911. 11. p. 62.

On the upperside of the forewings the yellow disc is toothed externally. Hindwings of a shade more obscure than the type.

The meaning of this description is not clear.

ab. apicicellata Tutt. Ent. Rec. 1910. 22. p. 157 & 158.

The upperside of the forewings with a small extra ocellus near the apex.

Tutt assumed that the type of megera had only the main apical eye-spot present.

ab. simplex Caruel. Misc. Ent. 1948. 45. p. 80.

The upperside of the forewings without the small ocellus sometimes present on the outer side of the main eye-spot near the apex.

Caruel apparently took the opposite point of view regarding the Linnaean type, he states that the type form shows an extra small ocellus and names the form without it. Tutt in the preceding form states that the type does not possess it and names the form which does. The type must be examined before it can be decided which is a synonym.

ab. alberti Albert. Ent. Z. 1895. 9. n. 27. fig. 57.

= triocellata Tutt. Ent. Rec. 1910. 22. p. 158.

= hermini Hirschke. Ver. Zool.-bot. Ges. Bonn. 1910. 50. n. 411.

= addada Lempke. Tijdschr. Ent. 1936. 79. n. 271. (see vol. 100. n. 17.)

Upperside of the forewings showing the main large apical eye-spot and an extra small one above it near the apex, also another below it in cell 5, between veins 3 and 4, half the size of the main one and also pupilled with white.

ab. biocellata Lempke. Lamb. 1947. 47. p. 40. figs. 24, 25, 26.

Upperside of the forewings with an extra spot below the main apical eye-spot, in cell 4 and clearly separated.



ab. bicubitocellata Verity. (nom. nov. pro triocellata Halzl. Verf. It. 1, 2, 3, 4.  
= triocellata Halzl. (nom. proec. Tutt.) Mitt. Münch. Ent. Ges. 1924. 14. p. 14.  
Upperside of the forewings with an extra spot above the main apical eye-spot and  
two others below it in cells 2 and 3, all with white pupils.

ab. croesus Stauder. Z. Wiss. Ins. Biol. 1924. 17. p. 173.

Examples showing on the upperside of the forewing a number of extra ocelli, exceeding  
in number those of the above forms.

ab. bipupilla Mosley. Nat. Jour. 1896. 5. suppl. p. 16.

= bipupillata Turner. Ent. Rec. 1932. 44. p. 61.

Upperside of the forewings showing two white pupils in the main apical eye-spot  
instead of the normal one.

ab. quadriocellata Oberthur. Lep. Comp. 1909. 3. p. 365.

Upperside of the forewings with the main apical eye-spot containing two white  
pupils and showing an extra ocellus above it near the apex, and another below it in  
cell 3.

ab. triopes Fuschamp. Ent. Rec. 1910. 21. p. 146.

Upperside of the forewings with an enormous apical eye-spot containing three white  
pupils. The main part of the eye contains two white pupils and is joined to a  
smaller one above it which is also pupilled with white, the three white pupils are  
thus enclosed in one ring, having the appearance of an "English Cottage Loaf".

ab. albiapuncta Lempke. Lamb. 1947. 47. p. 24.

Upperside of the forewings showing no black ring around the white pupil of the  
apical eye-spot.

ab. elongata Lempke. Tijdschr. Ent. 1957. 100. p. 437.

Forewings with the apical eye-spot elongated.

ab. impupillata Lempke. Lamb. 1947. 47. p. 24.

Upperside of the forewings showing no white pupil in the apical eye-spot.

ab. operta Schultze. Soc. Ent. 1904. 19. p. 10.

Upperside of the forewings showing no white pupil in the apical eye-spot and the  
hindwings with no white pupils in the marginal ocelli.

ab. inocellata Lempke. Lamb. 1947. 47. p. 24.

Upperside of the forewings with no apical eye-spot.

ab. parviocellata Lempke. Tijdschr. Ent. 1957. 100. p. 437.

Upperside of the forewings with the apical eye-spot distinctly reduced in size.

ab. anticrassipuncta Lempke. Tijdschr. Ent. 1957. 100. p. 437.

Upperside of the forewings with the apical eye-spot distinctly enlarged but with  
only one white pupil. Almost exclusively a ♀ form.

ab. furialis Schultze. Ent. 2. 1906. 21. p. 278.

Upperside of the hindwings with no white pupilled ocelli, only two black dots or  
points remaining which are hardly visible.



ab. *postreducta* Lampke. Tijdschr. Ent. 1957. 100. p. 438.

Upperside of hindwings with only two eye-spots, usually extra 6 instead of 8.

ab. *posteropluriocellata* Demoulin. Lamb. 1940. 30. p. 27.

Upperside of the hindwings with six black marginal spots instead of the normal four, the two extra ones being towards the apex.

ab. *limbojuncta* Stenrooshaus. Ent. Ber. (Amst.) 1934. 15. p. 271. fig.

Upperside of the hindwings with the ocelli elongated and connected by a short white line to the dark outer border.

ab. *maciocellata* Verity. Farf. It. 1953. 5. p. 25. pl. 56. f. 2.

Upperside of hindwings with the ocelli twice as large as usual.

ab. *decorata* Caruel. Misc. Ent. 1948. 45. p. 82.

On the underside of the forewings in the apical area there is, above the small ocellus above the main eye-spot, a still further very small ocellus. Rare, much less frequent on the upperside.

ab. *nongeminata* Lampke. Tijdschr. Ent. 1957. 100. p. 438.

On the underside of the hindwings at the anal angle is a single eye-spot instead of the normal double one.

ab. *totenigrocellata* Verity. Farf. It. 1953. 5. p. 25. pl. 56. f. 2.

Underside of the hindwing with the ocelli entirely black with the usual white pupil and surrounded by the usual grey ring, as on the upperside. Normally the white pupil is narrowly surrounded by black and then with very slender circles.

ab. *goodsoni* Hopkins. Entom. 1955. 88. p. 74. pl. 3. f. 5 & 6.

Essentially an underside form. The row of ocelli on the underside of the hindwing present but each ocellus represented only by the outer brown ring and a minute white pupil. The black spot and the narrow brown ring which surrounds it completely absent. Forewing with markings strongly obsolescent on the outer side of the apical eye. Hindwing much less variegated than usual, the marginal thin line represented by a somewhat thick brownish band.

ab. *depuncta* Schnaider. Polsk. Pismo. Ent. (1949) 1950. 19. p. 240.

On the upperside of the hindwing the small white points in the ocelli are absent. Somewhat similar to ab. *furialis* Schultze which however has only two tiny black points remaining of the marginal ocelli. In *depuncta* the ocelli are presumably all present but lack the white points.

ab. *parvopunctata* Stach. Spraw. Kom. fizyogr. Krakow. (1920-22) 1922. 55-56. p. 133.

ab. *minor* Gussich. Glasnik Hrvats. Prirodosl. Društva. 1917. 29. p. 220.

Much smaller, 34-36 mm. The hindwing upperside more dusted.

gen. aest. *filipluma* Ball. Ann. Soc. Ent. Belg. 1914. 58. p. 177.

Specimens of the summer generation. These can be separated by their scale formation. See complicated description.



*megera*

subsp. *caledonia* Verity. Bull. Soc. Ent. Fr. 1911. p. 314.

Described as a subsp. from Scotland. Verity says these differ in the width and intensity of the black markings and very broad marginal band. The base of the hindwing entirely blackened.

Scottish specimens do not appear to be different from English or Irish. The name can be used if desired for all British specimens.





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p.1.

Erebia Dalm

epiphron Knoch., Beitr. 1783. 3. p. 131. pl. 6. f. 7.

aberrational forms etc.

epiphron

epiphron Knoch.

The figure of this, the type form, shows a female in which all the ocelli of the upperside are pupilled with white. It is not found in Britain.

epiphron

subsp. mnemon Haworth. Trans. Ent. Soc. 1812. 1. (1). p. 332.

Haworth states "of the size of *Coenonympha pamphilus*", fuscous black, with four black spots on the forewing and two on the hindwing.

Haworth said the form came from Scotland but it has since been discovered that his specimens were collected by Stoddart at Ambleside, the name mnemon therefore applies to the North England race, especially on account of its size, as small as *C. pamphilus*.

Warren in Entom. 81. p. 181, states that the English form is undoubtedly *aetherius*, the subspecies extending over the greater part of the Alps, but this would appear extremely doubtful as Warren himself seems to think by what he says on p. 184.

It seems preferable to use the name given to English specimens by Haworth but if exception is taken to this, *aetherius* must be used in which case mnemon would become a synonym. I certainly do not agree that mnemon be used for Scottish specimens as Warren suggests since Haworth stresses the small size, that of *pamphilus*, which would appear to rule out the much larger Scottish race. Warren says that Haworth must have seen Scottish specimens because he described a well-marked example with four spots on the forewing. This is not at all conclusive since we have a number of Cumberland specimens which show this character.

Haworth's mnemon then was a well-marked example, of the small size of *C. pamphilus*, collected at Ambleside by Stoddart, smaller than the robust Scottish race.

epiphron

subsp. scotica Cooke. Entom. 1943. 76. p. 105.

Larger, handsomer and more brightly marked than the North England race. In size, from thorax to wing tip, doubled it runs from 36 to 40 mm., the largest of my (Cooke's) Westmoreland specimens measures 38 mm., but most are between 34 and 36 mm.

This is the most definite name for the Scottish race despite what Warren has to say in Entom. 71. p. 181 about mnemon Haworth being the correct one, size alone ruling this out. See notes above on mnemon.

ab. albinescens Oberthur. Lep. Comp. 1909. 3. p. 287.

The normal fulvous band of the upperside replaced by pale yellowish-orange.

ab. nelamus Boisduval. Ind. Meth. 1840. p. 26.

= bernensis Meyer-Dur. Verz. Schmett. Schweiz. 1852. 1. p. 152. pl. 2. f. 3.

Original description merely "sub caeca". This presumably means the spots and bands almost absent.

Meyer-Dur says that bernensis may be the same as nelamus. The forewing band is reduced to three or four small suffused spots, usually containing small black eye-spots.

Possibly both of these are racial but a large number of British specimens come under this description.



ab. caeca Vorbrodt. Schmett. Schweiz. 1911. 1. n. 456.  
No black eye-spots on upper or underside.

ab. privata Turati & Verity. Bull. Soc. Ent. Ital. (1910) 1911. 42. p. 214.  
Forewings with the spots in the rust-brown band very small, Hindwings uniform brown.  
Presumably the hindwings show no rust-brown band or spots.

ab. exannulata Osthelder. Schmett. Sudbayern. 1925. 1. p. 108. description p. 107.  
On the upperside only the white pupils are visible, with no black surround.

ab. ornatissima Hormuzaki. Ent. Rundsch. 1937. 54. p. 277.  
The ocelli strikingly enlarged. On the forewing the reddish-yellow band is very broad and reaches the median cell. The ocelli sometimes show white pupils above and below but sometimes are without pupils, but equally large. Hindwing with a broad reddish band with three large round ocelli without white pupils.

ab. latefasciata Dioseghy. Verh. Siebenburg Ver. Nat. (1929-30) 1930. 79-80. p. 204. pl. 2. f. 3.  
The fulvous band of the forewing so wide that it reaches the discoidal cell.  
The figure shows the band of the hindwing half the width of the forewing band.

ab. effusa Turati. Atti. Soc. It. Sci. Nat. (1914-15) 1915. 53. p. p. 483.  
Unusually broad bands on the upperside of the forewings, extending in rays and penetrating the discoidal cell. The ocelli very much reduced or absent.

ab. obsoleta Tutt. Brit. Butts. 1896. n. 427.  
= nigerrima Le Charles. Bull. Soc. Ent. Fr. 1927. p. 138. pl. 2. f. 5.  
The fulvous bands of the upperside completely absent, leaving the wings entirely black-brown.  
Le Charles' nigerrima had the upperside of the wings entirely black.



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aethiops Esper. Eur. Schmett. 1777. 1. pl. 25. f. 3. 8. pl. 63. f. 1. 9.

aberrational forms etc.

ab. reducta Hartig. Ent. Rundsch. 1924. 41. p. 42.

= biocellata Hartig. Ent. Rundsch. 1924. 41. p. 42.

On the forewing the two eyes in the red band are blind, with no white pupils. The red band is only a red circle.

Hartig's biocellata had deep black unpupilled eyes, two in number, on upper and underside of the forewing. Hindwing with three fulvous spots in place of the normal band, each with a black point.

Hartig sinks his biocellata as a synonym in Studi Trentini 1930. 2.

ab. caeca Rocci. (nom. preoc. Rebel.) Mem. Soc. Ent. It. 1923. 2. p. 8.

= depupillata Osthelder. (nom. preoc. Stein.) Schmett Sudbayern. 1925. p. 119.

The ocelli without pupils.

Similar to the preceding reducta but presumably may have any number of blind ocelli, reducta has only two.

ab. semicaeca Rocci. Mem. Soc. Ent. It. 1923. 2. p. 8.

On the upperside some of the ocelli are blind, without white pupils, the others normal.

ab. depupillata Stein. Ent. Jahrb. 1918. 27. p. 93.

On the upperside of the hindwing the ocelli in the band are blind, without the normal white centres.

ab. pupillifera Kolar. Lamb. 1938. 38. p. 174. pl. 9. f. 2.

Of the ocelli only the white pupils remain.

The figure shows all four wings with tiny white points.

ab. inaequalis Mousley. Ent. Rec. 1902. 14. p. 19.

The number of ocelli unequal on opposite sides.

ab. fritschi Oberthur. Lep. Comp. 1911. 5. (1). p. 328. pl. LXXIII. f. 673.

Lep. Comp. 3. p. 326. (described but not named.)

On the forewing upperside the red band shows a very small apical white centred spot with an even smaller one beneath it, a mere black point. The hindwing band is broken up into four fulvous macules, each containing an ocellus. On the underside the forewing shows no ocelli at all.

Oberthur in Bull. Soc. Ent. Fr. 1916. p. 154 says that fritschi is the same as royi Clemens but this is not so, royi has no ocelli on the upperside of the forewing.

ab. binotata Popescu-Gorj. Bul. Sti. Acad. Repub. Rom. (Biol). 1955. 7. p. 726. pl. 4. f. 36.

The submarginal band of the forewing normal but containing only two ocelli, reduced in size and completely separated but still with white pupils which are equally visible on the underside.

Similar to the preceding which, however, does not show the ocelli on the underside.

ab. tetraocellata Rocci. Mem. Soc. Ent. It. 1923. 2. p. 8.

Upperside of the forewing showing four ocelli in the red band.



ab.freyeri Oberthur. Lep.Comp.1911.5.(1).p.328.pl.LXXIII.f.6/4.  
 Lep.Comp.3.p.326.(described but not named.)  
 = pentaocellata Rocci. Mem.Soc.Ent.It.1923.2.p.8.

Forewing with five ocellated spots in the red band, all pupilled with white.  
 Hindwing with four similar spots.

Oberthur describes and figures this form but also mentions a more extreme form figured by Freyer in Neu Beitr.pl.8.f.2. which has six ocelli on the forewing. Since Oberthur figures the five-spotted form it must be taken as freyeri, the six-spotted form has since been named croesus.

ab.croesus Schawerda. Z.Ost.Ent.Ver.1921.6.p.2.

Forewing showing six ocellated spots in the red band, four of them large, a fifth smaller one beneath these, and a sixth tiny one above the apical spot.

ab.dehermanni Dehermann. Le Nat.1910.32.p.35.

= royi Clement. Bull.Soc.Ent.Fr.1916.p.126.fig.p.127.

On the upperside of the forewing the red band is of normal width but shows no trace of ocelli, the underside being similar. Hindwing with three fulvous spots in place of the normal band each containing an ocellus with white pupil. On the underside the ocelli are absent, as on the forewing.

ab.caeca Rebel. Berge's Schmott. 1910.p.43. (fig.Lamb.38.pl.11.f.1.)

On the upperside there are no ocelli in the red band of the forewing.

Since only the upperside is stressed it must be assumed that the underside is normal and therefore not the same as the preceding in which they are absent.

ab.paradoxa Schawerda. Verh.zool.-bot.Ges.Wien.1928.78.p.(21).

Similar to the preceding dehermanni, with no ocelli on the forewing above or below, but the red band is narrow, rudimentary, whilst in dehermanni it is of normal width.

ab.inocellata Owen. Entom.1952.85.p.92.

The ocelli of all wings completely absent above and below. The red band is of normal width. Hindwing with the band broken up into five fulvous spots with no trace of spots.

ab.purpurea Sibille. Lamb.1927.27.p.74.

On the hindwing the white-pupilled ocelli are absent in the submarginal band which is composed of red macules. Presumably the upperside.

ab.enucleata Popescu-Gorj. Bul.Sti.Acad.Repub.Rom.(Biol)1955.7.p.726.fig.pl.3.f.29.

On the underside of the hindwing the ocelli are absent, but present on the upperside.

ab.abbreviata Hirschke. Jahrb. Wien.Ent.Ver.(1910)1911.21.p.94.pl.1.f.9.

The red band of the forewing upperside is restricted to a small portion surrounding the apical ocellus and continued downwards briefly in the form of a triangle. There

ab.demarginata Popescu-Gorj. Bul.Sti.Acad.Repub.Rom.(Biol).1955.7.p.726.pl.2.f.13.

On the underside of the forewing the inner border of the red submarginal band is not sharply defined but prolonged diffusely towards the basal part of the wing.

ab.nigra Mousley. Ent.Rec.1902.14.p.19.

The band of the forewing restricted to mere rings of red-brown surrounding the ocelli, giving the insect a very dark appearance.

ab.obsoleta Tutt. Brit.Butts.1896.p.432.

Hindwing with the red-brown band quite obsolete.



ab.flavescens Tutt. Brit. Butts. 1896. p. 431.

On the forewing upperside the band is of a pale yellowish instead of red-brown.

ab.perfumosa Dannehl. Ent. Z. 1925. 39. n. 56.

The band on the upperside of the forewing veiled over with black dusting, its normal position still showing. The white pupils on the hindwing stand out in a narrow veiled band. The underside is dusted with black.

ab.violacea Wheeler. Butts. Switz. 1903. p. 137.

The bands of the upperside are of a varying shade of heliotrope, darker in the males than in females.

ab.pallida Mousley. Ent. Rec. 1902. 14. p. 19.

Female with the ground colour greyer than normal and the fulvous bands restricted to circles round the ocelli.

ab.semialbina Verity. Bull. Soc. Ent. It. 1913. 45. p. 217. (emialbina in error.)

= semialbina Verity. Ent. Rec. 1916. 28. p. 133. (spelling corrected.)

The costa and a large area between the ocelli and the margin of all wings, is of a dirty white, the rest light chestnut.

ab.huebneri Oberthur. Lep. Comp. 1912. 6. p. 327. pl. 124. f. 1099.

The figure shows a male with the ground colour pale orange-brown, becoming greyish-brown at the margin. The normally red bands are pale chestnut, the black ocelli are replaced by greyish.

Presumably an albino.

ab.ochracea Mosley. Nat. Guide. 1894. no. 46. p. 105.

= ochracea Tutt. Brit. Butts. 1896. p. 430.

= luteofasciata Rocci. Mem. Soc. Ent. It. 1923. 2. p. 8.

On the underside the female has the basal and subterminal bands of the hindwing ochreous, instead of grey.

ab.leucotaenia Staudinger. Cat. Lep. Pal. Faun. Bd. 2. 1871. p. 26.

= albofasciata Osthelder. Schmett. Sudbayern. 1925. 1. p. 118.

Named from the plate in Freyer's Neu Beitr. pl. 35. f. 3-4. 1833. in which it is called "neoridas" Bsd. This shows the underside with the basal and subterminal bands pale grey in the ♂ and whitish-grey in the ♀. They are not pure white as some authors state.

ab.pallidior Mousley. Ent. Rec. 1903. 15. p. 168.

♂ with the underside pale grey and the bands lighter than normal.

ab. infasciata Warren. Mon. Erebia. 1936. p. 136. pl. 71. f. 875.

On the underside of the hindwing the silver scaling of the submarginal band covers almost the entire wing, completely obliterating any trace of the usual bands. The forewing band is very broad.

Two specimens of this rare form were taken at Arnside in 1950 & 1951.

ab.stricta Mousley. Ent. Rec. 1903. 15. p. 168.

On the underside of both fore and hindwings the bands are almost obsolete and the spots very small.



aethiops

subsp. caledonia Verity. Bull. Soc. Ent. Fr. 1911. p. 311. pl. 1. f. 1.

Verity separates Scottish specimens as smaller than Alpine races, never showing more than three small ocelli on the forewing and the bands of the underside frequently indistinct.

Verity does not mention specimens from north England which do not appear to differ greatly from Scottish. The statement that the bands of the underside are frequently indistinct seems to be rather sweeping, there is great variation in this respect. The ocelli also often number more than the three Verity stresses. The name can be used for British specimens if desired.





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galathea Linnaeus. Syst. Nat. 1758. 10. p. 474.

aberrational forms etc.

galathea

subsp. serena Verity. Bull. Soc. Ent. It. 1912. 24. p. 205.

The Northern subspecies which includes British specimens. See Verity's description.

ab. citrana Lambillion. Cat. Lep. Belg. 1906. Addenda p. 417.

Above and below the ground colour is cream-yellow or pale citron-yellow, the markings black as in the type.

ab. citrina Krulikowsky. Rev. Russe Ent. 1907. 7. p. 29.

The ground colour above and below of a rich citron yellow.

Possibly the same as the preceding but by the description of a much more definite yellow.

ab. fulvata Lowe. Wheeler Butts. Switz. 1905. p. 143.

= brunissime Perrier. Lamb. 1935. 35. p. 213. pl. 9. f. 1-2.

The ground colour warm primrose yellow, the black replaced by rich tawny-brown.

ab. electra Weigen. Eur. Schmett. 1829. 1. p. 99. pl. 25. f. 4.

Taken from the figure in Esper Suppl. 1. pl. CKL. Cont. 66. f. 4. The ground colour yellow, the markings blackish-brown, the white spots in the margins absent on all wings.

Weigen's figure shows a much paler brown, more of a red-brown, than Esper's, which is almost black. It differs from the preceding by the complete absence of the light marginal spots.

ab. rubra Mosley. Nat. Journ. Suppl. 1896. p. 16.

= franzenaui Aigner. Ann. Hist. Nat. Mus. Nat. Hung. 1906. 4. p. 312.

= albina Lhomme. Cat. Lep. France. 1923. 1. p. 31.

The black markings replaced by rather pale red-brown.

Lhomme's albina had the black markings coffee coloured

franzenaui had the markings fawn-brown, upper and underside.

ab. griseus Varin. Rev. Fr. Lep. 1948. 11. p. 359. pl. 7. f. 8.

The normal black markings replaced by grey with a whitish, slightly greenish reflection. Hindwings underside markings light brown, forewings and sides grey as on upperside.

ab. flavina Gaede. Seitz Suppl. 1930. 1. p. 153. (nom. nov. pro flava Fritzsche)

= flava Fritzsche. Int. Ent. 1. 1911. 5. p. 220. (nom. preoc. Tutt.)

♂♂ in which the ground colour is distinct yellow, brimstone, cream-yellow or loam. These shades of yellow are covered by citrina Krul. and citrana Lamb. Fritzsche writes a far from clear article stating that the real name for males with yellow ground colour should be "flava", ignoring priority and the various names already given. Gaede in Seitz gives the new name "flavina" since flava is preoc. by Tutt. The name cannot be used even as a synonym of citrana or citrina since it includes all shades of yellow, and it cannot have priority over either.



ab. galathea-obscurior Esper. ? Gaede. Lep. Catalogus. 1931. 29. p. 180  
Gaede gives reference to Esper's Eur. Schmett. pl. CKL. f. 4., which has already been named electra by Meigen. There is no mention of obscurior in Esper.

ab. nacrea Oliver. Entom. 1937. 70. p. 80.

The ground colour chinese white with no trace of the usual yellow or cream.  
Figured by Frohawk in Brit. Butts. pl. 31. f. 20.

ab. amarginata Metzger. Jahresber. Wien. Ent. Ver. 1897. 8. p. 21. pl. 1. f. 1-2.

The white marginal spots of the upperside not separated from the fringe by the usual black line, but running straight through.

ab. depuncta Stephan. Iris. 1923. 37. p. 31.

On the forewing the apical eye-spot fails on both upper and underside.

ab. epanops Rebel. Sitzungsber. Akad. Wiss. Wien. 1917. 126. 41. p. 779.

= epanopides Nitsche. Verh. zool.-bot. Ges. Wien. 1919. 69. p. (104).

The apical eye-spot of the upperside of the forewing stands out distinctly in a light area, not flowing into the black area.

Rebel described the form under the subsp. procida and Nitsche under galathea typical. Since they are the same gene it is undesirable to separate them.

ab. punctellata Cabeau. Rev. Mens. Soc. Ent. Nam. 1925. 25. p. 65.

The apical eye-spot of the forewing very tiny on both upper and underside, like the point of a needle.

ab. ocellata Zusanek. Z. Ost. Ent. Ver. 1925. 10. p. 60.

On the upperside of the hindwing the marginal band shows distinct white rings, in the males pupilled with black, in the females with blue.

Normally these ocelli are not prominently white ringed.

ab. punctata Grund. Soc. Ent. 1908. 23. p. 82.

On the upperside of the hindwing in the black outer margin there is a row of three to four pale blue spots.

Described under the subsp. procida but occurs in the typical race. Grund calls the form galathea ab. punctata.

ab. fasciata Lambillion. Rev. Mens. Soc. Ent. Nam. 1909. 9. p. 74. (fig. Lamb. 30. pl. 10. f. 3)

On the upperside of the forewing there is a continuous white band from costa to inner margin formed by the absence of the thin black dividing line normally seen in the white space between veins 1 & 2, which connects the median black area with the black marginal band. The white ground therefore forms a continuous band on both fore and hindwings.

ab. extrema Stauder. Neue Beitr. Syst. Ins. 1920. 1. p. 148. fig.

On the upperside of the forewing the white band is little interrupted by the veins and the marginal white spots are reduced to a minimum, especially towards the apex. The white spots at the apex much reduced but the main one is elongated and fuses with the white median band. The hindwing has no dividing black between the oval basal white patch and the white median band, the marginal white spots are reduced to three situated towards the anal angle. The apical eye spot of the forewing is absent on both upper and underside.





ab. *apicalis* Turati. Atti. Soc. It. Sci. Nat. 1919. 58. p. 167.

The light spots at the apex of the forewing are extended and invade the black field of the post-cellular, thus giving the impression of a completely different type of butterfly.

ab. *illuminata* Stauder. Iris. 1921. 35. p. 28.

♀. All the white patterning enlarged. The lower white wedge of the forewing is joined to its neighbouring white median band spot. On the hindwing the black is heavily mixed with white, the outer margin also spotted and chequered with white.

ab. *tornusdisjuncta* Verity. Farfalle Di. It. 1953. 5. p. 66. pl. 58. f. 38.

The lower part of the black marginal band of the forewing, at the tornus, shows a white patch or crescent situated between the lowest white marginal lunule and the white median band from which it is separated only by a thin black line. This is a description of the figure, Verity's description is far from clear.

ab. *trimouleti* Dubordieu. Amat. Pap. 1923. 1. p. 260. pl. 5. f. 5.

On the upperside of the forewing the central black bar on the costa shows a thin white curved line which is probably the discocellular vein outlined in white. Also the thin black line which normally crosses the white median band in veins 2 and 3 is absent, as in ab. *fasciata* Lamb., making the band continuous.

ab. *vispardi* Jullien. Bull. Soc. Lep. Gen. 1907. 1. p. 167. pl. 6. f. 1.

On the upperside of the hindwing in normal specimens the black median band surrounding the cell shows a protruding black square stretching out from the discoidal. In this form this black square contains a white patch, in the form of a triangle.

A very feeble character. The black square is so small that the white triangle in it can easily be missed.

ab. *zobeli* Heinrich. Int. Ent. Z. 1911. 5. p. 221. (fig. Dtsch. Ent. Z. 1916. pl. 4. f. 2.)

On the hindwing upperside the upper part of the black marginal band fails, leaving a broader white area, only a small spot showing in its place.

ab. *albibasa* Lempke. Tijdschr. Ent. 1957. 100. p. 443.

The black marking at the base of the wings is absent, for the rest normal. Lempke does not say if it is fore- and hindwings, or how much black is absent. If it is the entire black area which stretches along the inner margin the form must be an extreme one.

ab. *duponti* Reverdin. Bull. Soc. Lep. Gen. 1927. 5. n. 174. pl. 5. f. 9.

The black marking restricted. On the upperside of forewing the black basal patch does not connect with the black of the costal bar. The costal bar itself is much reduced in width, less than half normal width, and the costa above it is white with no black shading. On the hindwing the black marking which surrounds the cell is much restricted, the upper portion being practically absent and the lower half extremely narrow. The underside corresponds with the upperside.

ab. *lactipicta* Stauder. Ent. Anz. 1922. 2. p. 46.

♀. The upperside of the forewing so lightened that it resembles the figure of *Mel. japygia* subsp. *cleante* Bsd., in Seitz 1. pl. 38. row d. There is also a complete absence of the black element at the apex, and the median markings are hardly visible. The white marginal spots on both wings particularly large. The eye-spots of the hindwing completely isolated in a white area, as in *larissa herta adriatica*.



*ab. leucogonia* Collier. Entom. 1952. 65. 1. 5. 5. (fig. Barrett 1. pl. 28. f. 1a.)  
 On the upperside of the forewings the subapical black bar and the ocellar  
 apical spot are entirely absent, leaving a large white area divided only by  
 the black veins. The oblique median band, and the basal black patches, are slightly  
 reduced in size, and the submarginal band on all wings reduced to a clear black  
 line, shaded slightly in places, outlining the inside of the marginal white  
 lunules. On each hindwing there are only two black spots, situated in interspaces  
 1A and 2, connecting with the marginal border by a small scattering of black  
 scales. The basal black markings are reduced in size giving the appearance  
 altogether of a much more white insect than any other aberration given here.  
 Paratype ♂. South Wales Coast is in the Rothschild-Cockayne-Kettlewell Coll.

*ab. mosleyi* Oberthur. Lep. Comp. 1909. 3. p. 343. (fig. Ento, 10. n. 265.)  
~~= atthis Costantini. Atti. Soc. Nat. Mat. Modena. 1916. 49. p. 14. (fig. Nat. Sic. 20. pl. 1.)~~  
 = *albobasilaris* Frohawk. Vars. Brit. Butts. 1938. p. 12. pl. 2. f. 1.

On the forewing the black bar, normally running from the centre of the costa,  
 is completely absent, leaving the median area completely white. Only the  
 margins and basal area remain normal. On the hindwing the median black bar is  
 also absent with the exception of its lower part which is indicated by black  
 dusting more especially towards the base of the wing. The marginal white lunules  
 on both wings are small. On the underside the black bar on the forewing and the  
 black median band on the hindwing are absent as on the upperside.  
 This is the homozygote of the following *ab. aperta* Rebel.

*ab. aperta* Rebel. Berge's Schmett. 1910. p. 37. (fig. Nat. Sic. 20. pl. 1. f. 1-2.)  
 = *atthis* Costantini. Atti. Soc. Nat. Mat. Modena. 1916. 49. p. 14. (fig. Nat. Sic. 20. pl. 1.)  
 The heterozygote of the preceding *mosleyi* Ob. and very similar. On the forewing  
 the black bar on the costa, completely absent in *mosleyi*, is only indicated by  
 slight dusting of the discocellular vein and a thinly dusted black line between  
 veins 3 and 4, vertical and situated where the costal black bar usually ends as  
 it stretches towards the outer margin. Hindwing with the median black band  
 which surrounds the cell only indicated by black dusting more especially on the  
 lower edge of the cell. In *ab. mosleyi* these dusted lines are completely absent on  
 both fore and hindwings. The figure of *atthis* Costantini shows that it is the  
 same as *aperta* Rebel. The form is represented in the collection here by both  
 heterozygote and homozygote, bred by Collier.

*ab. vitrimontis* Kessler. Rev. Fr. Lep. 1945. 10. p. 70. pl. 3. f. 1-2.  
 Less extreme than either *ab. mosleyi* or *aperta*, the central costal bar being more  
 prominent, it is very similar to a specimen figured in Frohawk's Brit. Butts. pl. 31.  
 fig. 24. Upperside of forewing with the black central costal bar reduced to a  
 "T" like mark, the top of the T parallel with the costa. The marginal black band  
 somewhat reduced, with three very small middle lunules. Hindwing with the black  
 median band surrounding the cell absent except for its lower part towards the base  
 of the wing, the margins more or less normal.  
 The underside is more impressive and different from either *mosleyi* or *aperta*, it  
 is the underside which Frohawk figures, no description of the upperside is given  
 by him. On the underside of both forewing and hindwing the normal marginal  
 zig-zag lines are completely absent. On the forewing the costal median black bar  
 is very narrow, as on the upperside, on the hindwing all patterning is absent  
 with the exception of the marginal ocelli which only have a mere suggestion of  
 their normal dusky surround.

*ab. bicuneata* Verity. Bull. Soc. Ent. It. 1913. 45. p. 216.  
 Upperside of the forewing with the two white central patches of the median band  
 wedge-shaped, their points towards the margin.



*ab. disjuncta* Gussich. Glasnik Hrvts. Prirodosl. Društva. 1, 17. 27. 218.

The original description merely says "the white spot on the costa of the forewing is divided by a black streak into two parts."

This presumably is the oval white spot at the base of the costa which is the only separated spot. We have two specimens which answer the description, these have a thin black line running horizontally running from the base, through the white area to the black bar.

*ab. valentini* Williams. Ent. Gaz. 1951. 2. p. 247. pl. 7. f. 1. - 5 & 8-10.

The two central white spots of the median white band, which are situated nearest to the outer margin, are reduced considerably in size, thus the black costal bar runs straight through from the costa to the outer margin enclosing the two small white spots which vary very much in size, sometimes almost absent but in the figures always slightly indicated. These spots are what Williams refers to in his rather misleading description as "traces of ground colour". Williams' description reads "In the new form the blotch last mentioned is extended distally and becomes confluent with the marginal markings. The aberration is in itself slightly variable in the extent to which there remain slight traces of the ground colour at the extremity of the extended blotch."

*ab. nicoleti* Culot. Bull. Soc. Lep. Gen. 1905. 1. p. 69. pl. 1. f. 5.

The upperside of the forewing almost devoid of white marginal spots, the hind wing completely so.

*ab. galaxaera* Esper. Eur. Schmett. 1800. Suppl. 1. n. 97. pl. CKL. Cont. 66. f. 5.

In the figure the large white oval basal patch of the forewing is black listed, all the white marginal lunules of fore and hind wings are absent and all white markings are narrower or smaller.

*ab. brunneocosta* Lempke. Tijdschr. Ent. 1957. 100. p. 442.

Forewing with the costa, from the base to the large black blotch at the apex, of a coffee-brown colour. Described from a ♀.

*ab. marconi* Frohawk. Vars. Brit. Butts. 1938. pl. 2. f. 4.

All white areas suffused with black scales producing a drab effect. The normally white areas are easily defined but dusky. In the following *ab. nigra* Frohawk the white areas are only faintly discernible.

*ab. nigrata* Schroder. Mitt. Ber. Ent. Ver. (1923-25) 1924. 1. p. 69-70.

= *nigra* Frohawk. Vars. Brit. Butts. 1938. p. 55. pl. 7. f. 2.

= *hades* Reiss. Ent. Z. 1961. 71. p. 3-4. fig.

On the upperside the forewing is completely black, the hindwing usually darkened, only the pale basal patch and central band of patches stand out, although they are strongly blackish darkened. The hairs at the base and on the body are yellowish-grey. The underside, on the whole, is paler.

Frohawk's *nigra* would appear to be the same form. The figure shows the fore and hind wings completely blackened but the position of the normal white patches can be seen in a slightly lighter shade of black.

Reiss' *hades* is likewise completely blackened but the position of the white markings still discernible in a lighter shade. The description says all the normally white patches on the upperside of fore and hind wings are grey-blackish giving the impression of blackened wings, the black markings however still contrast. Fringes not black and white but grey-blackish. Basal hairs grey-black.



*ab. nigra-malmediensis* Mellaerts. Lamb. 1926. 26. p. 84.

The description says "More black. Deep black which gives it a more melanic character than the Southern forms and races."

The description is of little use, it possibly means the black pattern is of a more intense black than in other races.

*ab. lugens* Oberthur. Etudes 1896. 20. p. 33. pl. 2. f. 16.

Entirely and uniformly black-brown on upperside of fore and hind wings.

Underside of hindwings with the markings still visible, the base and marginal ocelli being slightly lightened.

Apparently not even the position of the normal white patches can be seen, it is therefore more extreme than the preceding forms.

*ab. quasi-lugens* Oberthur. Lep. Comp. 1909. 3. p. 347. from fig. Milliere Icon 1. (3) pl. 3 = *nigerrima* Kautz. Z. Ost. Ent. Ver. 1931. 16. p. 86. pl. 4. f. 7. and Milliere Icon 1. pl. 3

Upperside of the forewing black-brown except for a remnant of the three white patches above the inner margin dusted with dark scales, and the basal oval mark almost obliterated with dark scales. The normal white markings of the hindwing are indicated clearly but all well dusted with dark scales, giving a greyish-cream impression.

Kautz based his *nigerrima* on the same figure in Milliere and on two other similar specimens figured on pl. 4. figs. 7 & 10 in Z. Ost. Ent. Ver. vol. 16. Milliere gave the name "*ab. turcica* Bsd." to his figure but *turcica* is an Asiatic race and the Milliere specimen was from France.

"*var. turcica*" Boisdual. Ind. Meth. 1840. p. 25.

The name is not used in these notes, the description being too vague to be of use "*fere tota nigra*", almost completely black. Many authors treat it as a race from Turkey, as the author apparently meant it to be, but others call it *ab. -*. Staudinger, in his Catalogue, calls it *ab. turcica* from Balkans, but since these mainly black forms have separate names (see the preceding) it would be best not to include the name here.

*ab. nigricans* Culot. Bull. Soc. Lep. Gen. 1911. 2. p. 101. pl. 10. f. 4.

An extension of the black marking on the upperside and the blackish powdering which covers certain parts of the light ground colour on the underside.

The figure shows all the white markings smaller, especially the two middle spots of the median band which are mere points as in *ab. valantini* Williams. The oval basal spot is only half normal size. On the hindwing the white median band, as well as being much narrower, is not complete, the black of the margin encroaching and linking up with the black basal area near the inner margin. The oval white spot is also much smaller than normal. The white marginal lunules are present.

*ab. nigrescens* Varin. Rev. Fr. Lep. 1948. XL. p. 358. pl. 7. f. 6.

Upperside of fore and hind wing with the black marginal border much widened and lacking the usual white spots. In the forewing this border extends towards the mid-costal patch, connecting with it by a sprinkling of black scales. The oval patch in the cell is equally dusted over.

The figure shows the apical group of white spots entirely absent and the upper part of the median white band heavily dusted over with blackish scales but still well-defined. The oval spot at the base is also well dusted in the same manner. The hindwing, apart from the extra wide black border with no white spots, is normal.





ab. *caronae* Galley. Mitt. Schweiz. Ent. Ges. 1947. 20. v. 1948. fig. p. 366. (*caronae* Galley)  
 The general patterning of the upperside is normal but most smaller white spots are reduced or effaced. The chief character is the absence of the veins which normally show clearly in the white areas. The under side of the hind wing is the black zig-zag marginal line straightened out and running parallel with the outer black line which precedes the fringe, this character showing to a lesser degree on the margin of the forewing. The ocelli of the hindwing are absent and only slight traces of the veins remain in the central white areas, the veins at the base are normal.  
 Peroneural defect.

ab. *annae* Kessler. Rev. Fr. Lep. 1945. 10. p. 73. pl. 3. f. 3-4.  
 According to the author this specimen is a female with the coloration of a male both upper and underside, especially the latter.  
 The figure shows what appears to be an ordinary male both in shape of wings and the underside of the abdomen.

ab. *gigantea* Hartig. Ent. Rundsch. 1924. 41. p. 42.  
 Giant female, 56 mm. from apex to apex.

ab. *minor* Pionneau. Echange. 1927. 43. no. 4-9. p. 11.  
 = *nana* Pionneau. Echange 1928. 44. no. 434. p. 14.  
 Small specimens of less than 35 mm. in the race *serena* Verity.  
 Pionneau gave the further name *nana* to small specimens of the typical race which seems completely unnecessary.

ab. *pura* Hiepelt. Int. Ent. Z. 1914. 8. p. 144.  
 Upperside with the white colour extended and on the margin the white spots go right through, large and well-developed.  
 It is not clear what the latter part means, presumably the white is rayed outwards through the black marginal area. The underside is ab. *galene* Ochs., the author having taken the description in Seitz Macrolep. 1. p. 115 as correct which is not so, *galene* has no spots on the underside.



ab.deficiens Stauder. Boll. Soc. Adriat. Sci. Nat. (1908) 1911. 25. (4). 3. p. 111. - 1. 2. f. 3.  
Instead of a row of well-developed ocelli on the underside of the hindwing, there are only weakly pupilled small spots with large surrounds. The apical eye of the forewing is present.

ab.semigalene Stauder. Ent. Anz. 1929. 9. p. 169.

On the underside of the hindwing the ocelli are replaced by a few small dots.

ab.galene Ochsenheimer. Schmett. Eur. 1808. 1. (2). p. 236.

→ On the underside the apical eye of the forewing is completely absent and on the hindwing there is no trace of the usual ocelli. On the upperside there is a small point in place of the apical eye, on the hindwing no trace of ocelli.

→ = galenides Freisacker. Verh. zool.-bot. Ges. Wien. 1910. 60. p. (6).

Genetically the same form but described under procida, quite unnecessarily in my opinion and so treated as a synonym.

→ = pura Niepelt. Int. Ent. Z. 1914. 8. p. 144.

The underside is the same as galene. Seitz description of galene quite wrong.

ab.vidua Stauder. Boll. Soc. Adriat. Sci. Nat. (1908) 1911. 25. (3). p. 111.

= quadriocellata Pionneau. Echange. 1937. no. 467. p. 2.

On the underside of hindwing the eye-spot in cell 1113/LV1, or also in both cells 1113/LV1 and LV1/LV2 are absent on both sides. The apical eye well-developed, large, and like the hindwing ocelli, distinctly blue-white centred.

The two cells mentioned are those immediately beneath the cell in which there is normally no spot so that only four spots remain counting the double one at the anal angle as two spots.

Pionneau's quadriocellata had the ocelli of the hindwing reduced to four instead of the usual six.

ab.leucomelas Esper. Eur. Schmett. 1782. 1. (2). p. 141. pl. LXXXI. Cont. XXXI. f. 1-2.

Underside of the forewing at the apex, and the entire hindwing, creamy-brownish and markingless, only the markings of the upperside showing through.

The form would seem to be confined to the Southern European race and specimens with English locality labels must be regarded with suspicion. We have a freshly set example said to have been caught at Swanage.

ab.ulbrichi Aigner. Rov. Lapok. 1907. 14. p. 143.

Seitz says this is the same as leucomelas Esper.

ab.depuncta Stephan. Iris 1923. 37. p. 31.

On the underside of the forewing the apical spot fails completely.

This also applies to the upperside and is included in the upperside forms on page 2 of these notes.

ab.duplex Stauder. Boll. Soc. Adriat. Sci. Nat. (1908) 1911. 25. (3). p. 112.

Underside of forewing with, besides the apical eye-spot, additional eyes in the formation of one right against the apical eye and attached to it in cell 1112/1113, or also in cell LV1/LV2. Also examples occur with both these extra spots, i. e. with four complete ocelli, but they are very rare. All should be called ab.duplex irrespective of the number or position of the additional eye-spots.



ab. *deubeli* Silbernagel. Ent. 3.1909.23.p.151.

= *completissima* Stauder. Boll. Soc. Adriat. Sci. Nat. (1908)1911.25.(3).p.93.pl.2.f.1.

The description is long and rambling and not at all clear. The main points are that on the underside of the forewing there is a small spot in cell 4 and a pupilled eye in cell 5 (the apical eye). Also ocelli in cells 2 and 3, making 3 ocelli and one spot. On the hindwing a complete row of ocelli, making 7 if the double spot at the anal angle is counted as two.

Stauder's *completissima* had an increase of eye-spots on the underside of the forewing, 2, 3, or 4 ocelli. Hindwing with 5 ocelli as well as the double eye-spot. All ocelli blue-white or milky centred.

ab. *decemocellata* Delahaye. Cat. Lep. Maine and Loire. 1908.p.12.

= *completissima* Stauder. (in part) Boll. Soc. Adriat. 1911.25(3).p.93.pl.2.f.7.

Underside of the forewing with three ocelli, the hindwing with seven.

This form is included in ab. *completissima* which however can also have four ocelli see the preceding ab. *deubeli* Silb.

ab. *addenda* Grund. Soc. Ent. 1908.23.p.82.

On the underside of the hindwing there is an extra ocellus in cell 4.

This cell normally shows no spot.

ab. *gemellata* Costa. Bull. Soc. Ent. It. 1922.53.p.113.fig.

On the underside of the hindwing the second "ring" around the ocellus, contains two spots or eyes instead of the normal one. The extra spot is elongated as in the following ab. *perlongata*, as is also the spot above it (in cell nearest the apex.)

ab. *perlongata* Stauder. Boll. Soc. Adriat. Sci. Nat. (1908)1911.25.(3)p.112.pl.2.f.4.

On the underside of the hindwing in the two cells nearest the apex, the ocelli are strikingly elongated longitudinally, sometimes oval, sometimes wedge or pear-shaped. The length of these elongated eyes varies between 5 and 5 mm.

ab. *exteriusocellata* Verity. Boll. Lab. Zool. Gen. Agr. Portici. 1920.14.p.36.

On the underside of all wings the ocelli are arranged so that they almost reach the external margin, therefore the black pattern is extremely narrow. This also applies to the upperside.

ab. *goritiana* Stauder. Boll. Soc. Adriat. Sci. Nat. (1908)1911.25.(3).p.113.pl.2.f.6.

All the ocelli of the underside of a quite noticeable size, 2 to 3 mm. in diameter deep black and in the ♂ beautiful white-blue centred, in the ♀ sky-blue centred. In the costal cell of the hindwing there is generally an additional unpupilled black ocellus present, without a surround. The number of ocelli on the forewing can vary from the normal one, often additional ones are present or, as in the figure, no ocellus at all.

f. 5.

ab. *melanophthalma* Stauder. Boll. Soc. Adriat. Sci. Nat. (1908)1911.25.(3)p.113.pl.2.f.5.

On the underside of the hindwing the ocelli, including the one near the apex, large as in the preceding *goritiana*, but unpupilled and deep black. The ocelli on the forewing can be increased.

ab. *caeca* Lempke. Tijdschr. Ent. 1957.100.p.443.

On the underside all eye-spots are present but blind.

This presumably means both fore and hind wings.



*ab.melania* Oberthur. Etudes.1896.20.p.33.pl.2.f.17.

On the underside of the hindwing the white parts are so heavily dusted with black that they are obscured.

Oberthur says that this darkening is principally on the underside which suggests that it is present, to some extent, on the upperside.

*ab.flavescens* Goetghebuer. Rev.Mens.Soc.Ent.Nam.1912.12.p.84.

Underside of forewing normal except the apical angle which is yellowish.

Hindwing with a cream ground, the markings and shading more or less deep ochreous but without any trace of black.

*ab.flava* Tutt. Brit.Butts.1896.p.436.

= *lutetiana* Oberthur. Lep.Comp.1910.3.p.346. (fig.vol.5.pl.LX.f.550.)

Female in which the underside is bright orange-yellow.

It is obvious that Tutt refers to the normally pale ground colour since he says "the female varies from a form containing the slightest trace of ochreous to a form of bright orange-yellow colour (*ab.flava*).

Oberthur gives a coloured figure of his *lutetiana* which shows it to be the orange form and the same as Tutt's. Oberthur in his description says it is a form of *leucomelas* with the markings come back, a somewhat strange conclusion. The figure shows the markings and ocelli normal, in a darker tone of orange-brown and therefore nothing to do with *leucomelas*.

*ab.flava* Linstow. (nom.preoc.Tutt.) Berl.Ent.Z.1908.53.p.233.

= *ferruginea* Fritsche. Int.Ent. 1.1911.5.p.220. (fig.Hubner.Eur.Schmett.pl.41.f.185)

Underside of forewing yellowish-white, only the apex and distal margin rust-brown. Hindwing pale rust-yellow, the bands black dusted and therefore appearing dark rust-brown.

Linstow says this is the form which Hubner figures in Samml.Eur.Schmett.1.pl.41 fig.185. but that this must have been a very fresh specimen, presumably because it is highly coloured.

Fritsche described his *ferruginea* as having the underside more or less rust-brownish and rust-yellow tinted.







*valentini* Wals.



*meslezi* Ob.



*aperta* Reb.



*nigrescens*  
Vav.



*fabroniae*  
Galat.



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semele Linn.

Syst.Nat.X p.474 1758.

semele

anglerum Verity. Ent.Rec.36 p.22 1924.

The race from England according to Verity although it does not appear to be at all constant.

Average darker underside.

semele

angliae Verity. Ent.Rec. 36 p.22 1924.

The intermediate race between scota Vty.and jubaris,found in England. This is almost impossible to determine and since Verity has already named one race from England it would seem that this form is merely an aberration.

semele

scota Verity. Bull.Soc.Ent.Fr.p.313 pl.1 f.10 1911.

This appears to be a good subspecies from the east coast of Scotland. The fulvous on the upperside of the forewings more extensive,only surpassed by subsp.arisaeus from Corsica but of a pale dull yellowish

semele

atlantica Harrison. Ent.Rec.58 p.58 1946.

The subspecies from the Hebridean islands,described from Vatersay. It occurs on the islands of Gunna,Coll,Sundray,Pabbay,also on Rhum in the Inner hebrides.Separable from the mainland examples by its brighter and more contrasting coloration,in particular the underside is blacker and the yellow portions more orange.

I have not seen any Hebridean material but the description fits specimens from Ireland,also one specimen from the west coast of Scotland.

semele

thyene Thompson Ent.Rec.56 p.65 1944.

Subspecies from North Wales coast. Strikingly smaller than other races or forms in Britain. The males have their coloration more uniform than in typical semele with the pale areas more ochreous. The forewing ocelli smaller ,the lower one frequently absent|The underside duller and less contrasting than typical specimens,with the white portions of hindwings tinted with ochreous. Females similarly with a unicolorous tendency but with the obsolescent character less marked. Flies earlier than type,the third week in June.



semele Linnaeus. Syst. Nat. 1758. X. p. 474. continued.

aberrational forms.

ab. *griseus* Lempke. Tijdschr. Ent. 1957. 100. p. 446.

The ground colour of the upperside of the wings paler, greyish-brown.

ab. *clarensis* De Lattin. Ent. Rec. 1952. 64. p. 335. (see Cockayne, Ent. Rec. 1954. 66. p. 39)  
Described as a subspecies from Co. Clare, Ireland but is not constant and quite scarce. Most of the specimens known were collected by L. A. E. Sabine, a semi-dealer, no doubt because they were pale. We have a series of *semele* collected in Co Clare which are the more or less normal limestone form, just a shade paler than normal *semele*, certainly not as pale as De Lattin's form, it is therefore merely a local aberration, and demoted to this rank by Cockayne in 1954.

The description says it differs from other Irish examples by its very divergent males. The ground colour relatively light with a quite apparent incline to grey instead of the normal rather pronounced brown. The most apparent characteristic is the great reduction of the androconial patch of the forewing, being confined to a few remains in the region of the lower cell border so that at first it appears that the patch is entirely lacking.

ab. *sabrinæ* Heslop. Ent. Rec. 1962. 74. p. 148.

♂ and ♀ upperside. The band on the margin of both wings much deepened in colour the greyish pattern towards the base paler than usual though still clear and sharp. Ground colour of the rest of the wings in both sexes ranges from pale buff to cream white. Types from Failand, Somerset.

This would seem to be an extreme form of the preceding *clarensis*.

ab. *clara* Tutt. Ent. Rec. 1910. 22. p. 180.

♀. On the upperside the markings are rich orange-fulvous.

ab. *pallida* Tutt. Brit. Butts. 1896. p. 398.

♀. The transverse band on the upperside of the hindwing is pale straw-coloured.

ab. *suffusa* Tutt. Brit. Butts. 1896. p. 398.

♂. The transverse band on the upperside of the hindwing not showing, making it unicolorous.

ab. *bipicta* Verity. Ent. Rec. 1916. 28. p. 166.

♀. The transverse band on the upperside of the hindwing divided into two colour by a narrow diffused line of brown, the inner part whitish-yellow, the outer part reddish-fulvous.

Described as an aberration in the subsp. *scota* Vty. but could no doubt occur in other races.

ab. *fulvina* Cabaen. Lamb. 1928. 28. p. 11.

The upperside of the forewing with a large fulvous patch in the basal half.





ab. jubaris Fruhstorfer. Int. Ent. 1.1908.2.p.9.

= splendens Brouwer. Icar en Mind 1942. 6.p. 160-161.

A male of the dark heath form which becomes more beautiful than the light brownish-yellow (not reddish, but yellow) on the forewing and hindwing has extended more than in normal specimens.

Lempke says that jubaris is not a subspecies. The bands of the upperside are broad and uninterrupted. (Tijdschr. Ent. 100.p.449.)

ab. tenebrosa Stauder. Its. Wiss. Ins. Biol. 1922. 17.p.166. pl. 1. f. 6.

Upperside of forewing strongly darkened because the yellow-brown band below the upper of the two eye-spots is broadly interrupted and the usually pale longitudinal patches are dusted with black scales.

The figure shows the lower part of the band of the female, i.e., the cells above and below the lower eye-spot, dusted over. The yellow cell in which the apical eye-spot is situated, is not dusted.

ab. blachierioides Stauder. Iris. 1921. 35.p.29. (Lempke. Tijdschr. Ent. 1.57.100.p.450)

Stauder's description is of little use, it merely says the darker, more sombre mountain form from Southern Calabria. Lempke uses the name tentatively for a very dark form of the female with black-brown ground colour of the upperside with strongly reduced light markings. The fulvous band on the forewing is broadly interrupted and that on the hindwing only consists of the wedge-shaped marginal spots. He figures the form on pl. 15. f. 9 and says that this dark form obviously may be produced in widely separated countries.

This aberration described by Lempke is probably nothing to do with Stauder's form but since Stauder's description is useless we are following Lempke.

ab. postlineolata Brouwer. In Icar en Mind 1942. 6.p.161.

♀ showing on the upperside of the hindwing a row of little white lines situated in the brownish-yellow spots before the outer margin.

ab. addenda Tutt. Brit. Butts. 1896.p.398.

Extra black spots on the upperside of the forewing.

Other authors have since named the various combinations originally covered by this

ab. punctata Aigner. Ent. Anz. 1906. 20.p.12.

An extra black spot on the upperside of forewing in cell 3.

ab. tripuncta Tutt. Ent. Rec. 1910. 22.p.180.

Three ocelli on the upperside of the forewing.

By the name this is taken as meaning three spots, not necessarily pupilled with white. Tutt says "ocelli" but unfortunately names it "punct" meaning spots or points. If the form has white pupilled ocelli it would be the same as the following triocellata and sink as a synonyma.

ab. triocellata Ragusa. Nat. Sic. 1904. 17.p.109. pl. 3. f. 1.

Three ocellated spots on the upperside of the forewing, not merely spots but each containing a white pupil.

ab. quadriocellata Lempke. Tijdschr. Ent. 1957. 160.p.447.

On the upperside of the forewing two extra spots, one between the two normal ones and the other below them.

Lempke does not say if these are pupilled with white or not.



ab.monocellata Lempke. Tijdschr.Ent.1957.100.p.447.

On the forewing the lower eye-spot is reduced to a mere point, or has completely disappeared.

ab.ocelloides Nordstrom & Bryk.

ab.parviocellata Lempke. Tijdschr.Ent.1957.100.p.447.pl.14.f.9.

On the upperside of the wings the eye-spots are strikingly smaller but pupilled.

ab.macrocellata Lempke. Tijdschr.Ent.1957.100.p.447.pl.14.f.10.

With strikingly enlarged eye-spots. Mostly ♀♀ but also occurs in the ♂♂.

ab.thyone Schultz. Soc.Ent.1908.22.p.178.

Female with the ocelli of the forewing reduced to only half their normal size, appearing as little black points.

ab.anopenopterus Lanbrichs. Comptes-Rendus. Soc.Ent.Belg.1875.18.p.XII.f.11.

Female showing on the upperside of the forewing no trace of ocelli and on the hindwing only the white pupil of the ocellus at the anal angle, the normal black surround being absent. On the underside of the forewing the apical eye-spot is represented by a white point with no black surrounding ring, the lower eye-spot being absent altogether. On the hindwing underside there is no trace of the spot at the anal angle.

ab.holanops Brouwer. De Wandeljaar 1935.7.p.99.

No eyes or ocelli showing on either upper or underside.

ab.caeca Tutt. Brit.Butts.1896.p.398.

The apical spots of the forewings blind.

Tutt only mentions males but the form is not uncommon in the females.

ab.postcaeca Schawerda. Z.Ost.Ent.Ver.1931.16.p.31.

On the upperside of the hindwing the ocellus or spot at the anal angle is absent.

ab.symetrica Trfurth. Z.Ost.Ent.Ver.1923.8.p.50.

Vein(media)2 split into an elliptical mark thus  on both wings.

ab.minor Cabeau. Rev.Mens. Soc.Ent.Nam.1925.25.p.6.

Very small, not exceeding 40 mm.



Eumenis semele ab. splendens Brouwer p. 160-161

"Heel mooi wordt het voorkomen van het mannetje van de donkere heidevorm, wanneer de lichtere, bronsgele (niet roodachtige, maar gele) kleur over voor- en achtervleugels niet verdwenen is, doch juist uitgebreider is dan bij de gewone exemplaren. Ik zou ze de var. splendens willen noemen".

Prof. dr. A. M. Brouwer in "In weer en wind"  
(Vol. 6 - 1942-/, pagina 160-161).

Eumenis semele ab. postlineata Brouwer p. 161

Een exemplaar ~~rijkt~~ een wijfje, ving ik,  
"waar op de bovenzijde der achtervleugels  
in de bruinige vlekken voor de vachter..  
rand een vrij witte lijntjes voorkomt. Ik  
zou dit een postlineolata willen noemen".

Prof. dr. A. M. Brouwer in "In weer en wind"  
(Vol. 6 - 1942/, pagina 161).

Beide aberratieve vormen werden gevangen  
in Leist (prov. Utrecht).

R.T.



## underside forms.

ab. albipuncta Peerdeman. Ent. Bericht. (Amst.) 1962. 22. p. 42. pl. f. 13.

Underside of the forewing with two clear white points between the two normal eye-spots, parallel with the outer margin.

ab. albinervata Warnecke. Iris 1943. 57. n. 40.

On the underside of the hindwing all the veins are white-grey to white, over the whole of the wing.

The description is taken from Lempke, the later years of Iris not being available.

ab. uniformis Czekelius. Verh. Siebenburg. Ver. Nat. (1917) 1918. 67. p. 10.

= mellaertsi Derenne. Lamb, 1926. 26. p. 82.

Underside of hindwing uniform, transversely speckled, without any trace of a band. Derenne's mellaertsi had the underside of hindwing with no pattern, the whole wing being similar to the basal area.

ab. infra-ochreata Caruel. Misc. Ent. 1946. 42. p. 123.

On the underside of the hindwing the extracellular area, which is usually white, is washed with buff-yellow.

ab. infrabrunnea Lempke. Tijdschr. Ent. 1957. 100. p. 447. pl. 15. f. 6.

The ground colour of the underside of the hindwing brownish.





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				unipuncta Tutt.	4.
				unipupillata Pionn.	4.
caeca Tutt.	4.	pallescent Ckll.	1.		
completa Lpke.	6.	pallidemarginata Oberth.	2.		
costatransformis Leeds.	7.	pallidula Leeds.	1.	venata Lpke.	3.
crassiexcessa Leeds.	6.	pallidus Froh.	1.	vernetensis R.Oberth.	3.
		partimtransformis Leeds.	7.	virginalis Oberth.	2.
		pluripuncta Leeds.	4.		
depupillata Goods.	6.	postalba Leeds.	2.		
		postalbipuncta Peerd.	5.		
		postcaeca Peerd.	5.		
excessa Tutt.	5.	postcastanea Leeds.	6.		
excessa-lanceolata Froh.	6.	postexcessa Leeds.	5.		
		postice-inocellata Lpke.	5.		
		postlacticolor Leeds.	2.		
glabrata Leeds.	7.	postlanceolata Leeds.	6.		
		postmixtaexcessa Leeds.	5.		
		postobscura Leeds.	3.		
		postobsoleta Leeds.	6.		



1. Maniola Schrank.

tithonus Linnaeus. Mant. Plantarum App. 1771. n. 57.

tithonus

subsp. britanniae Verity. Bull. Soc. Ent. It. 1914. 45. p. 220. pl. 1. f. 21-22.

According to Verity our race is different from the Continental ones, his series coming from Bude and Benfleet.

Both sexes of a deeper fulvous, the marginal bands broader especially on hindwings the androconial patch very much broader, the number of ocelli tending to increase. For further details see full description in English in Ent. Rec. 28. p. 169.

aberrational forms .

ab. pallidula Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-49) 1950. p. 90. pl. 5. f. 10  
Ground colour somewhat paler than type, yellow ochreous or yellowish, or with the ground colour normal and the margins pale.

This is absurd, two totally different forms under the one name. The second form is already named by Oberthur pallidemarginata.

ab. antipallidula Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-9) 1950. p. 90. pl. 5. f. 1.  
Forewings with at least the outer half ochreous or yellowish, hindwings normal.

ab. mincki Seebold. Berl. Ent. Z. (1891) 1892. 36. p. 467.

The red-brown ground colour replaced by yellow.

The German word used is "neapelgelb" - Naples or Antimony yellow.

Leed's says his pallidula "covers" mincki but this is not so.

ab. pallescens Cockerell. Entom. 1889. 22. p. 2. (descript. vol. 11. p. 229.)

Every author, including Cockerell himself, has misread the description of this form which was given by Fr. G. W. Oldfield in Entom. XI. p. 228 and named by Cockerell in Entom. 22. p. 2., citing the description given by Oldfield. Cockerell imagine it to be the form with the orange replaced by whitish-yellow (see Entom. 1912. 45. p. 323) since he says it is the same as ab. subalbida Verity which has pale yellowish-white ground. Actually this cannot be, if the whole of Oldfield's description is read. This says "the ground colour of the upperside of both wings is a pale yellowish-brown or buff, relieved by the ordinary orange colouring, which contrasts singularly with the ground colouring; the antennae and the body of the insect are also buff, and the specimen presents generally a bleached appearance and more resembles C. pamphilus in general colouring, though not otherwise."

The latter statement alone makes it impossible for the margins to be dark, therefore Oldfield very wrongly described the dark areas as the "ground colour" This form then has the margins pale and the ground colour normal orange and may be the same as ab. pallidemarginata Oberthur, but since Oldfield misses the one character which would identify the form, the colour of the eye-spots, it is impossible to know whether or not the specimen was an albino. Unless the insect can be traced it is best not to use the name.

ab. subalbida Verity. Entom. 1904. 37. p. 56. pl. 4. f. 10.

= pallidus Frohawk. Vars. Brit. Butts. 1938. pl. 8. f. 2-3.

= laticolor Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-49) 1950. p. 89.

The ground colour yellowish-white.

Frohawk's pallidus had the wings yellowish-white.

Leed's laticolor had the wings "paler than pallidula" which was yellow-ochreous.



ab.albidus Cockerell. Ent.1889.22.p.3. (descript.vol.11.p.101.)  
 = albida Castle-Russell. Entom.1904.37.p.127.  
 = virginalis Oberthur. Lep.Comp.  
 = alba Leeds. Proc. S.Lond.Ent.& Nat.Hist.Soc.(1948-49)1950.p.89.

The ground colour white.

Castle-Russell described his albida as "the white form".

Oberthur's virginalis was similar to the figures in Barrett l.pl.34.f.1c & 1d, which he says are "white". His own female specimen was "white". The figures in Barrett are not white but creamy-yellowish, also his own figure is not pure white, but since he describes the form as white this must stand.

Leeds alba was white or closely appriaching white.

ab.antialba Leeds. Proc. S.Lond.Ent.& Nat.Hist.Soc.(1948-49).1950.p.89.  
 Forewings white, the hindwings normal colour.

ab.postalba Leeds. Proc. S.Lond.Ent.& Nat.Hist.Soc.(1948-49)1950.p.89.

The name is not valid since Leeds had seen no such specimens. He says the names may be "wanted" here. The forewings normal in colour, the hindwings white.

ab.antilacticolor Leeds. Proc. S.Lond.Ent.& Nat.Hist.Soc.(1949-49)1950.p.89.

Fore wings paler than antipallidula but nor white, they are symmetrically creamy or pale straw. Hindwings normal in colour.

ab.postlacticolor Leeds. Proc. S.Lond.Ent.& Nat.Hist.Soc.(1948-49)1950.p.89.

The name is not valid since Leeds had not apparently seen specimens, the name being given in case they may be wanted here. The forewings normal in colour, the hindwings pale but not white.

ab.albinotica Goodson. Ent. Gaz.1960.11.p.18.

Albino. All black or brown patterning replced by silver-grey, including the eye-spot

ab.lucida Byles. Entom.1940.73.p.136.

Male in which the normal ground colour between the sexual blotch and the outer margin is replaced by white, uniformly on each side. The rest of the wing normal.

ab.pallidemarginata Oberthur, Lep.Comp.1909.3.p.389.

The ground colour normal with the margins pale instead of brownish, but the apical eye remaining black with a white pupil.

Similar to albinotica Goodson which however has the eye-spot lacking in black pigment. Oberthur's form is not an albino.

ab.lesoudierae Le Moult. Novit.Ent.(1931-46)1938.8.p.64.

The opposite to albida Castle-Russell and virginalis Oberthur. The entire border of all four wings white, even in the part bordering the margins of the forewings, the orange-brown area is very light and the dark base of the hindwings is very mixed with white scales.

This would seem to be a symmetrical pathological form, the border of the albino form can hardly reach "white", see the figure in Frohawk Vars. Brit. Butts. vol.8.f.1, which agrees well with the several albinos I have seen.

ab.ultrafulvescens Leeds. Proc. S.Lond.Ent.& Nat.Hist.Soc.(1948-49)1950.p.90.

The ground colour darker fulvous than the type, the borders sometimes darkened.



ab. brunnescens Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-49) 1950. p. 90.  
The ground colour brown instead of fulvous. Fig. Frohawk's Brit. Butts. pl. 38 f. 14.

ab. obscurior Schultz. Ent. Z. 1928. 21. p. 278.  
Male with the base of the upperside of the forewings suffused with dark brown as far as the transverse median black shade (band). The fulvous of the hindwings is strongly reduced.

ab. lugens Oberthur (Charles). Lep. Comp. L909. 3. p. 390. (fig. vol. 5. pl. L CXLV. f. 680.)  
= vernetensis Oberthur (Rene). Lamb. 1937. 37. p. 26. pl. 2. f. 1.  
The black borders much widened, reaching to beyond the apical eye-spot. The hindwings almost completely black-brown. The figure is of a female.  
Rene Oberthur's vernetensis would appear to be exactly the same form in the male which is figured. The description says the black bands of the forewings much widened and the two ocellated spots are enclosed in them. Hindwings almost entirely blackish, there being hardly a trace of fawn in the centre.

ab. seminigra Rocci. Atti. Soc. Ligust. Sci. Nat. 1912. 22. p. 28.  
= postobscura Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-49) 1950. p. 90.  
Forewings normal. The hindwings so darkened that only a small patch of orange ground colour remains.  
Leeds postobscura had the fulvous of the hindwings almost, or entirely absent. The latter part of this has already been named semi-obscura by Hosp, only the first therefore can stand.

ab. semi-obscura Hosp. (semi obscura in error) Soc. Ent. 1916. 31. p. 54. fig.  
Forewings normal. Hindwings completely dark brown.  
Hosp gives the correct spelling at the end of his text.

ab. venata Lempke. Tijdschr. Ent. 1957. 100. p. 470.  
Upperside of the forewings with the nervures between the androconial band and the outer margin, of the same dark colour as the margins.

#### Variation of spotting --

typical form -- forewing with an apical eye-spot containing two white pupils.  
hindwing with a small eye-spot feebly pupilled at anal angle.

ab. antiobsoletissima Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-49) 1950. p. 95.  
Forewing with the apical eye-spot absent, or only showing the white centre with a slight shading.  
The figure in Frohawk's Brit. Butts. pl. 38 f. 20. is cited by Leeds as having no forewing spot but this is a pathological monstrosity with defective scaling, the only reason for the absence of the eye-spot. I have never seen tithonus without a trace of the apical eye and rather doubt if Leeds had.

ab. obsoletissima Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-49) 1950. p. 95.  
Fore and hind wings with no black spots, or with the forewing merely showing a white pupil with slight shading.





ab.unipupillata Pionneau. Echange 1936.52.no.464.p.23.

The apical eye-spot of the forewing upperside and sometimes on the underside, has only one white pupil instead of the normal two.

ab.unipuncta Tutt. Ent.Rec.1910.22.p.179.

On the upperside of the forewing the apical eye-spot, usually with two white pupils, is disintegrated, so that the lower half, small and almost separated and with no white pupil, leaves only the upper spot pupilled.

ab.bipupillata Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-49)1950.p.95.

The apical spot of the forewing drawn in at its middle, forming a figure of eight or completely cut into two separate spots very close together.

The figure shows the spots pupilled with white but they certainly do not appear separated or particularly drawn in at the middle.

ab.anticrasipuncta Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-49)1950.p.91.pl.5.f.13

The apical spot of the forewing large, often tailing downwards but not divided into two definite, or into an 8 shaped spot.

ab.antiparvipuncta Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-49)1950.p.91.pl.5.f.3

The apical spot of the forewing small.

ab.caeca Tutt. Brit. Butts. 1896.p.407.

The apical spot of the forewing exceedingly small and practically blind.

ab.apicoextensa Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9)1950.p.94.

Forewings with an elongated blackish spot or streak above the apical eye-spot, or with the apical spot itself elongated sideways.

These are two quite different forms and should not be included under the same name.

ab.addenda Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9)1950.p.94.

Forewings with an extra small black spot, higher than the subapical, not at the side of it.

It is quite ridiculous to name such a form, it is covered by the following antipluripuncta if Leeds had not separated it.

ab.antipluripuncta Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9)1950.p.94.

Forewings with an additional spot at the side of the apical eye-spot, or additional spot or spots in areas not associated with the postmedian(excessa) row.

ab.pluripuncta Leeds. not valid since Leeds had not seen such a form.

ab.postpluripuncta Leeds. not valid, Leeds had not seen specimens but says they might occur.



ab. postcaeca Peerdeman. Ent. Ber. (Amst.) 1962. 22. p. 42.

On the upperside of the hindwings the eye-spot is without a white centre.

ab. postalbipuncta Peerdeman. Ent. Ber. (Amst.) 1962. 22. p. 42.

On the upperside of the hindwings the eye-spot is not surrounded by a black ring.

ab. postice-inocellata Lempke. Lamb. 1934. 34. p. 154.

= postobsoletissima Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 95.

On the upperside of the hindwings the anal spot is absent.

ab. bimaculata Gussich. Glasnik Hrvats. Prirodosl. Društva. 1917. 29. p. 220.

Upperside of the hindwings showing two ocelli instead of the normal one, both pupilled with white to a noticeable degree.

ab. posttriexcessa Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 93.

Upperside of hindwings with three additional spots above the anal spot.

ab. postquadriexcessa Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 93.

Upperside of hindwings with four additional spots. (Five with the anal spot.)

ab. postexcessa Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 93.

Upperside of hindwings with one or more additional spots which can be equal or unequal on the different wings.

ab. postmixtaexcessa Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-9) 1950. p. 93.

Upperside of hindwings with extra black spots on one side but normal on the other, or any other wing devoid of additional spotting.

ab. antimixtaexcessa Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 93. pl. 5. f. 15

Upper or underside with a wing on one side with additional spotting but the opposite wing, or any other wing, devoid of additional spotting.

ab. mixtaexcessa Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 93.

Upperside of fore and hind wings with at least one forewing and one hindwing additionally spotted but not all wings.

ab. excessa Tutt. Brit. Butts. 1896. p. 408.

= antiexcessa Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 92.

On the upperside of the forewings there are one, two, three or even four extra spots, usually small and blind, sometimes large and ocellated.

ab. tithonellus Strand. Ent. Z. 1912. 25. p. 254. (fig. Tijdschr. Ent. 48. pl. 4. f. 5)

= quadripuncta (Hosp) Vorbrodts & Muller-Rutz. Mitt. Schweiz. Ent. Ges. 1917. 12. p. 441.

Two extra black spots on each forewing without white centres.

The figure shows only the one anal spot on the hindwing.



ab. *multiocellata* Oberthur. Lep. Comp. 1909. 3. p. 390. fig. vol. 5. pl. LXXIV. f. 681.  
On the upper and underside of the forewings two extra white pupilled spots below the double-pupilled apical eye-spot. These are large with prominent black surrounds to the white pupils.

ab. *crassiexcessa* Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 93. pl. 5. f. 9 & 14  
Upper and underside of forewings with two, or very rarely three, large additional spots, sometimes very large. The spots may not be of equal size and sometimes are devoid of white pupils.

ab. *postlanceolata* Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 94. pl. 5. f. 15.  
Underside of the hindwings with some of the postmedian spot fairly well elongated, sometimes with further white dribbling continuing outwards from them.

ab. *excessa-lanceolata* Frohawk. Vars. Brit. Butts. 1938. p. 39. pl. 8. f. 2.  
Underside of the forewings with two extra white-pupilled spots beneath the double-pupilled apical spot. Hindwings with a postmedian row of six large white-centred spots, the second from the top being exceptionally elongated into an elliptical streak.

ab. *completa* Lempke. Lamb. 1934. 34. p. 156.  
Underside with six white points on the hindwings. The type has only two.

ab. *postobsoleta* Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 95. pl. 5. f. 1.  
Leeds says the underside of the hindwings show only one, two or three white point, instead of the typical four, five or six. This is incorrect, Linnaeus states two spots, the form must therefore only apply to one or three points.

ab. *depupillata* Goodson. Ent. Gaz. 1960. 11. p. 18.  
On the underside all white spots or pupils are absent. The large black apical spot of the forewings, normally containing two white pupils, is blind. On the hindwings the usual white spots are absent, there being three blackish suffused spots in their place. The apical eye-spot of the forewings is also blind on the upperside.

ab. *lineigera* Lempke. Tijdschr. Ent. 1957. 100. p. 470.  
On the underside of the forewings there is a dark line basad of the apical eye-spot, extending from the costa almost to the inner margin.

ab. *infra-unicolora* Lempke. Lamb. 1934. 34. p. 156.  
Underside of the hindwings of a unicolorous dark brown, without the normal light area.

ab. *postcastanea* Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 90. pl. 5. f. 11.  
Underside of hindwings with the basal and other brownish parts outstandingly darker, some almost chocolate or coffee coloured.



ab. subsuffusa Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 90. descr. p. 82.  
Forewings with a paler, bleached, thinner, or defectively scaled patch, always  
commencing at the apex.  
Pathological form, which should never have been named.

ab. transformis Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 91. descr. p. 82.  
Pale, bleached, greasy, thinly scaled, or lighter in colour than the other wings.  
At least one wing must be entirely or almost entirely effected.  
Another unnecessary name, certainly not a genetic form.

ab. partintransformis Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 90 & p. 82.  
Portions of a wing or wings with a pale or bleached patch or streaks.  
Another pathological form which does not deserve a name.

ab. costattransformis Leeds.

ab. margotransformis Leeds.

ab. glabrata Leeds.

ab. transparens Leeds.

ab. suffusa Leeds.

None of the above names is valid. Leeds admits that he has seen no such specimens,  
the forms are therefore hypothetical. It is a pity he was ever allowed to  
publish this work on the group.

ab. irregularia Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 91 & 83.  
An unusual patch or streak of darker or bright scaling on a wing or wings.

ab. biirregularia Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 91 & 83.  
A wing or wings on the one side, different in colour from those of the opposite  
side. This does not include faded or bleached or faded examples but must be well  
scaled.

ab. minima Rocci. Atti. Soc. Ligust. Sci. Nat. 112. 24. p. 16.

= minor Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 95.

Small specimens.

Leeds says below 36 mm.

ab. major Leeds. Proc. S. Lond. Ent. & N. Hist. Soc. (1948-9) 1950. p. 95.

Large specimens over 41mm.





addenda Leeds.	4.	caeca Ksien.	6.	lernes Graves	11.
addenda Mousl.	4.	caeca Rbl.	6.	lerniformis Graves.	1.
alba Blackie.	1.	caeca Rocci.	6.	illuminata Krul.	3.
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anommata Vty. (underside)	8.	cinerea Cos .	2.	inocellata Kiss.	5.
antialba Leeds	1.	commacula Leeds.	3.	intermedia Blackie.	2.
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anticastanea Leeds.	7.	costatransformis Leeds.	9.		
anticrassipuncta Leeds.	5.			lacticolor Leeds.	9.
antiexcessa Leeds	4.	dextro-albescens Tutt.	9.	latimargo Peerd.	7.
antifulva Lpke.	4.			leucothoe Cab.	2.
antifulvosa Leeds.	1.	erymanthea Esp.	5.		
antilacticolor Leeds.	1.	erymanthoides Strand.	5.	major Leeds.	6.
antimixta excessa Leeds.	4.	excessa Leeds.	4.	margotransformis Leeds.	10.
antinigromargo Leeds. (upper)	3.			marmorata Lamb.	3.
antinigromargo Leeds. (under)	7.	feminea Graves.	1.	minor Leeds.	6.
antiobscura Leeds.	7.	flavescens Tutt.	7.	mixta excessa Leeds.	4.
antiobsoletissima Leeds	5.	fracta Zweig.	8.		
antipallidula Leeds	2.	frohawki Blackie.	9.	nana Steph.	6.
antiparvipuncta Leeds.	5.	fulvescens Leeds.	2.	nigrianira Johnst. (upperside)	3.
antipluripuncta Leeds .	4.	fulvopicta Heinr.	1.	nigrianira Johnst. (underside)	7.
antirufa Leeds	1.	fulvocincta Fuchs. ( )	1.	nigro-rubra Lamb.	1.
antiultrafulvescens Leeds	7.	fulvocincta Fuchs. ( )	3.	nuragiformis Vty.	3.
apicoextensa Leeds.	5.	glabrata Leeds.	10.		
atrescens Leeds. (upperside)	3.	grisea Tutt.	8.	oblitescens Schultz.	5.
atrescens Leeds (underside)	7.	grisea-argentacea Oberth.	2.	obsoletissima Leeds.	8.
		grisea-aurea Oberth.	2.	ocellata Tutt.	8.
biirregularia Leeds.	5.	griscens Tutt.	7.	ochrea Leeds.	7.
biocellata Lpke.	5.				
biocellata Tutt.	8.	hertha Heinr.	1.		
bioculata Rbl.	5.	hueni Krul.	1.		
bipupillata Leeds.	5.				
bipupillata Rocci.	5.				
brevipennis Lpke.	6.				
brigitta Ljungh.	2.				



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postexcessa Leeds.	4.		
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suffusa Tutt.	1.		
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tincta Blackie.	1.		
transformis Leeds.	10.		
transparens Leeds.	9.		



*jurtina* Linnaeus. 3rd. Ed. 1758. p. 475. n.  
= *janira* Linnaeus. 3rd. Ed. 1758. p. 475. n.

# Aberrational forms etc.

*ab.fulvocincta* Fuchs. Jahrb. Ges. Ver. Ent. 1900. 33. p. 37. n. (*ab.fulvocincta* Fuchs has been  
= *hertha* Heinrich. Berl. Ent. 1. 1909. 54. p. (3).  
= *ierniformis* Graves. Entom. 1930. 63. p. 75. . . .  
= *antifulvosa* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-49. 1950. . 100.  
Male. Forewings with a yellow-red dusty band, interrupted by the dark veins.  
Heinrich's *hertha* had a large yellow-red patch beneath the ocellus of the hindwing.  
Grave's *ierniformis* was a form similar to the one of subspecies with the patchful.  
Leeds' *antifulvosa* had a fulvous or ochreous patch below the apical eye-spot.  
The normal male shows little fulvous around the apical eye-spot.

*ab.fulvopicta* Heinrich. Deutsch. Ent. 1. 1925. p. 247.  
Male. Forewings with a distinct yellow patch below the apical eye-spot.  
Only differs from the preceding by the patch being yellow.

*ab.testacea* Schillo. 1. Ost. Ent. Ver. 1922. 7. p. 19.  
Male. Chocolate-brown, in the upper part of the discal cell and towards the ocellus,  
the wings are lightened by a strong whitish dull yellow which extends above the  
androconial patch outwards, gradually merging into the ground colour. Underside of the  
forewings dirty ochre-yellow with broad grey brown margins. Hindwings underside  
with only the marginal band dark, the rest of the wing rather paler than the forewing.  
This lightening extends over the whole of the wing so that the venation is completely  
visible in thick brown. Underside dirty grey-white, in the middle of the cell a  
dark brown spot framed in ochre-yellow.

*ab.suffusa* Tutt. Brit. Butts. 1896. p. 404.  
Male. Dark, almost black, without any orange marking.

*ab.nigro-rubra* Lambillion. Rev. Mens. Soc. Ent. Nam. 1903. p. 66.  
Male. Ground colour very dark, the ordinary band of the forewings vivid red. Hindwings  
uniformly strong black. Underside forewings brick-red, hindwings brownish-red.

*ab.feminea* Graves. Entom. 1930. 63. p. 54.  
Male. With chestnut scaling on the upperside of the hindwings.  
Described from the Irish subspecies but may occur in other races.

*ab.huenei* Krulikowsky. Soc. Ent. 1908. 43. p. 3.  
Female. The usual orange patch replaced by brown.

*ab.antirufa* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1949-9. 1950. p. 101.  
Female. The usual fulvous patch replaced by reddish or dark red.

*ab.pallens* Thierry-Mieg. Le Ent. 1889. 11. p. 74.  
= *antilacticolor* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. . 99.  
Female. The usually fulvous patch replaced by pale whitish-yellow.

*ab.semi-intermedia* Lempke. (nom. nov. pro *semialba* Blackie) Lamb. 1955. 35. p. 101.  
= *semialba* Blackie. (nom. prec. Bruand 1849). Entom. 1920. 53. p. 278.  
Female. The upper half of the usually fulvous patch of the forewings is yellow, the  
lower half white.

*ab.alba* Blackie. Entom. 1920. 53. p. 278.  
= *tincta* Blackie. Entom. 1920. 53. p. 278. (taken as synonym by Blackie. Ent. 1921. 54. p. 52).  
= *antialba* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 99.  
Female. The usually fulvous patch of the forewings replaced by white.



ab.intermedia Blackie. Entom.1920.53.p.278.

= antipallidula Leeds. Proc.3.Lond.Ent.& Nat.Hist.Soc.1948-9.1950. .100.

Female. The usually fulvous patch on the forewings replaced by creamy yellow.

ab.semialba Bruand. Bull.Soc.Emulation du Doubs.1849.p.40.

Two thirds of the ground colour of all four wings entirely white, the borders of normal colour.

The form is therefore a white aberration analogous to the white tithonus in Pap.d' Europe. Suppl. XII.p.262.pl.LAVI fig.f & g. The specimen figured by Frohawk in Vars. Brit. Butts.pl.9.f.2. is certainly not semialba Bruand.

ab.leucothoe Cazeau. Rev.Mens.Soc.Ent.Mem.1923. 3.p.4.

All wings entirely white on upper and underside, even the feet and antennae are white.

ab.brigitte Ljungh. Vet.Acad.Nya Handl.1799.20.p.147.pl.2.f.6-7.

= pallidula Leeds. Proc.3.Lond.Ent.& Nat.Hist.Soc.1948-9.1950.p.100.

All wings pale and concolorous, the base and inner margin reddish. The fulvous patch and apical eye-spot normal.

This would appear to be the pale washed-out form often met with in this species and not an albino since the apical spot is normal. Leeds pallidula was paler than typical varying from paler grey to paler brownish. Leeds wrongly cites Frohawk's cervinus as an example of pallidula-transformis, quite wrongly since this is a pure albino.

ab.cinerea Cosmovici. Le Nat.1892.p.264.

All wings grey, the disc of the forewings shaded with bluish-green reflections. The underside of the forewings is golden-yellow, the hindwings grey, slightly rosy.

It is not possible to define this form absolutely, it may be an albino or one of the many pale forms in this species, for this reason it is separated from the rest.

ab.illustris Jachontov. Soc.Ent.1895.10.p.65.

The upperside of all wings pale brownish-grey with a metallic reflection, the yellow patch paler than normal. Intermediate between cinerea Cosm. and the type form. Lempke cites the figure in Frohawk's Brit. Butts.pl.37.f.20 but to me this seems rather too rufous. Leeds has named this same figure rufa(next form).

ab.rufa Leeds. Proc.3.Lond.Ent.& Nat.Hist.Soc.1948-9.1950.p.101. (Froh. Brit. Butt.-137)

The upperside of all wings pale reddish-fuscous as the figure in Frohawk's Brit. Butts.pl.37.fig.20.

ab.grisea-argentea Oberthur. Lep.Comp.1909.3.p.385.

= pallidus Frohawk. (nom.preoc.Frohawk 1934) Vars. Brit. Butts.1938.pl.10.f.1.5

= cervinus Frohawk. Vars. Brit. Butts.1938.pl.10.f.3.9.

Albino. All wings silvery whitish to greyish, the orange of the subapical patch of the female showing up brightly.

The grey form of the albino as opposed to the golden forms. We have the type of cervinus Frohawk.

ab.grisea-aurea Oberthur. Lep.Comp.1909.3.p.385.

= fulvescens Leeds. Proc.3.Lond.Ent.& Nat.Hist.Soc.1948-9.1950.p.101.pl.6.f.8.

Albino. All wings pale yellowish-white with a golden tint, the orange or fulvous patch of the female showing brightly.

Leeds calls his figure fulvescens-transformis but the specimen is obviously an albino and not pathological as Leeds transformis forms seem mostly to be.





ab. nigrianira Johnstone. Entom. 1941. 71. n. 243.

= atrescens Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 102.

Female. The upperside of forewings dark greyish-brown, the fulvous patch almost absent, apical spot black with narrow orange surround. Hindwings dark greyish-brown. On the underside the hindwings are black, the central area a shade lighter. Forewings with wide black marginal band reducing the orange part which itself is suffused with blackish.

Mainly an underside form.

ab. antinigromargo Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 103. pl. 6. f. 2.

The border of the forewings on both upper and underside strongly blackish.

ab. marmorea Lambillion. Rev. Mens. Soc. Ent. Bel. 1903. p. 66.

= commacula Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 102. pl. 6. f. 3.

Upperside of all wings marbled with bluish-gray over the entire surface, even encroaching on the fulvous patch of the female.

Leeds commacula had all wings with mottled appearance.

ab. illuminata Krulikowsky. Soc. Ent. 1908. 23. p. 3.

Female. On the upperside of the hindwings an ochre-yellow mark at the end of the discoidal cell.

ab. postfulvosa Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 100

= ♀ fulvocincta Fuchs. (nom. prece. ♂ fulvocincta Fuchs) Jahrb. Mus. V. Nat. 1930. 53. p. 37.

Upperside of the hindwings with a bright band of ochreous, orange or fulvous divided by the veins.

Fuchs named two different forms under the one name. The male had a yellow-red area around the apical eye-spot and in these notes is treated as the true fulvocincta. The female had a more yellow band on both fore and hindwings before the margins as in postfulvosa Leeds, which must stand as the name for the form with a coloured band on the hindwings. Lempke in Lamb. 1935 erroneously calls this female form of Fuchs, "rufocincta", and still does so in his Cat. Med. Macrolep. for 1936, and again in the fifth Suppl. to it in 1937 with a wrong description which actually applies to the preceding illuminata Krulikowsky. He also, for reasons best known to himself, restricts the name fulvocincta to the female form, not the male, which has line priority, see Lamb. 1935. 35. p. 104. The form fulvocincta according to Fuchs himself had a complete band on fore and hindwings not just a "macule" of yellow at the end of the discal cell of the hindwings as Lempke states. See Tijdschr. Ent. 1937. 100. p. 461.

ab. rufocincta Fuchs. (in error for fulvocincta Fuchs.) Lempke. Lamb. 1935. p. 104. etc.

ab. subhiscula Strand. Ent. 1. 1912. 25. p. 154.

Female with the usually fulvous band of the forewings replaced by brown-red and with a band of the same tint on the hindwings. Described from the figure in Tijdschr. Ent. 48. pl. 4. f. 4. by Oudemans.

The form is very similar to the ♀ fulvocincta Fuchs but with a brown band on both wings instead of yellowish.

ab. nuragiformis Vesity. Ent. rec. 1916. 28. p. 169.

Female. On the upperside of the forewings the fulvous patch extends over the greater part of the wing, the brown ground colour being restricted to the costa and outer margin. The hindwings also show a fulvous band.



ab. antifulva Lemaire. Tijdschr. Ent. 1957. 100. p. 461.

Female. The yellow-brown patch of the forewings upperside so much extended that only narrow dark margins remain. The hindwings however are without a yellow-brown band or patch which are present in nuragiformis Verity.

ab. pauper Verity. Ent. Rec. 1916. 28. p. 163.

= antiaurulancea Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 106.

On the upperside of the forewings the fulvous patch of the female is much restricted thereby showing a wider margin. The patch is sometimes divided into macules by the darkened veins, the main apical spot very small, the lower one absent.

ab. pseudomas Cockerell. Entom. 1889. 22. p. 26.

Female with the coloration of the male.

The fulvous patch apparently is absent or nearly so.

ab. addenda Mousley. Ent. Rec. 1903. 15. p. 168.

= antiexcessa Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 105.

Female with extra spots, other than those of the double apical spot, on the forewings, similar to the ab. excessa of tithonus figured in Barrett 1.01.34.

ab. addenda Leeds. (nom. preoc. Mousley 1903) Proc. S. Lond. Ent. & N. H. Soc. 1948-9. 1950. p. 105.

An extra spot on the forewings but higher than the apical eye.

Another absurd aberration, already covered by Mousley's addenda.

ab. excessa Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 105.

On the upper or underside all four wings showing one or more extra black spots.

ab. postexcessa Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 105.

On the upperside of the hindwings one or more black spots. The type form has none.

ab. antimixtaexcessa Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 105.

The forewings showing on one side extra spotting below the apical eye, the other side normal.

ab. postmixtaexcessa Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 105.

On the hindwings one wing showing extra spots on the upperside, the other wing none.

ab. mixtaexcessa Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 105.

One pair of wings showing on the upperside extra spots, the other pair normal.

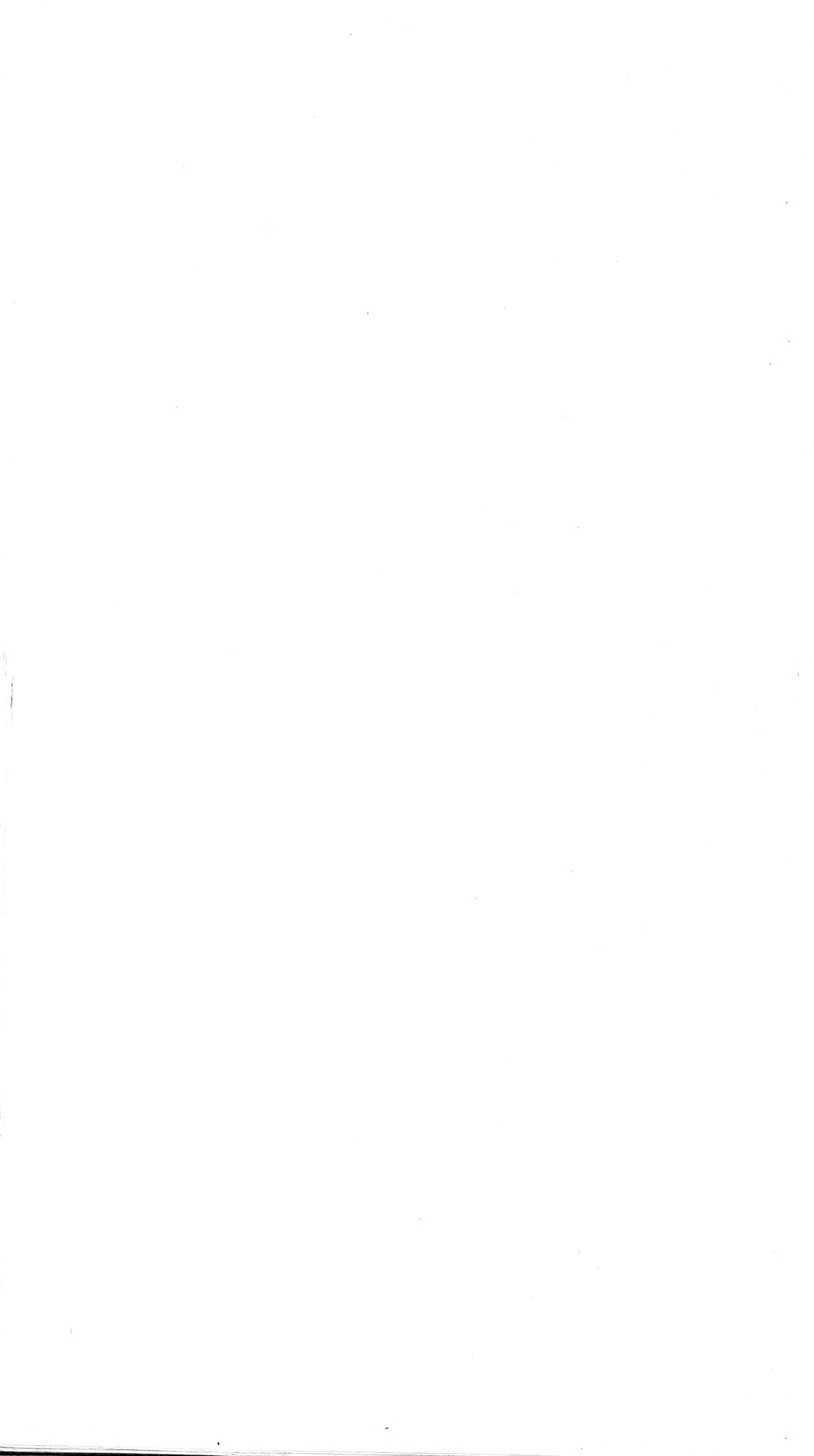
ab. antipluripuncta Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 106.

Forewings with an extra spot at the side of the apical eye, or in the area apart from the submedian.

ab. postpluripuncta Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 106.

The name cannot stand since the form is hypothetical. Leeds with his usual ignorance of the rules says-" This, if occurring would probably have-etc etc." If it were not so annoying his whole article is amusing.

Hindwings with an extra spot in an area, apart from the submedian, where normally there is no spot.



ab. pluripuncta Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 106.

The name cannot stand since the form is hypothetical.

Leeds says it would probably have extra spots in areas not associated with the submedian area on both fore and hindwings. I cannot imagine the hindwings of jurtina showing extra spots in any other area than the usual submedian-submarginal area.

ab. bioculata Rebel. Berges Schmett. 1910. p. 52.

= bipupillata Rocci. Cont. Lep. Piedmonts 1911. 1. p. 47.

On the forewings there are two white pupils to the apical eye.

ab. biocellata Lampke. (nom. prop. f. 1910) Lamb. 1959. 35. p. 148.

The apical eye of the forewings consists of two separated spots, each with a white pupil.

ab. erymanthoides Strand. Arch. Naturg. (1919) 1920. 85. A 4. p. 16.

= bipupillata Leeds. (nom. prop. Rocci 1911) Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 106.

The apical eye of the forewings doubled, sometimes separated but still connected by a short stalk, the lower spot not pupilled with white.

ab. erymanthea Esper. Eur. Schmett. 1783. 1. pt. 2. p. 180. pl. 90 (Cont. 40)

Male. On the upperside of the forewings the apical eye is doubled but still joined only the upper one being pupilled. In the interior angle is an extra spot which is quite large. Hindwings also show two spots. The underside is similar but another extra spot appears on the forewings between the apical doubled eye and the one at the interior angle. The hindwings show six spots, two of them pupilled with white. This must be a very rare form of the male.

ab. apicoextensa Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 106.

The apical spot of the forewings elongated sideways. The name includes also specimens with an elongated streak above the apical spot.

The two forms have nothing in common and should not be under the same name.

ab. anticrassipuncta Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 104.

The apical spot of the forewings very large.

ab. antiparvipuncta Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 104.

The apical spot of the forewings very small.

ab. anormata Verity. Entom. 1904. 37. p. 56.

= oblitescens Schultz. Ent. 1. 1908. 41. p. 479.

= inaeollata Kiss. Rev. Lapok. 1909. 16. p. 153.

= anomala Rebel. Berges Schmett. 1910. Ed. 9. p. 52.

= antiobsoletissima Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 106.

The apical eye spot of the forewings entirely absent.

Presumably "entirely" means both upper and underside.

ab. biirregularia Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 103.

The wings on the one side different in colour from those on the other side.



ab. irregularia Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 107.  
A patch of dark or brighter colour appearing on a wing or wings.

ab. caeca Rebel. Berge's Schmett. 1910. Pl. 9. p. 52.  
= caeca Rocci. Cent. Lep. Piemont 1911. 1. p. 27.  
= caeca Ksionchopolsky. Werke Ges. Ent. Poln. 1911. 8. p. 50. pl. 1. f. 3.  
= caecoides Strand. (non. nov. pro caeca Ksion. 1911) Arch. Naturg. 1926. 91. 12. . 261.  
= pupillatanulla Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 104.  
The apical spot of the forewings blind, no trace of the white apil.

ab. minor Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 107.  
= nana Stephan. Iris 1923. 37. p. 34. (non. nul.)  
Very small specimens, males below 44 mm., females 47 mm.  
Stephan in Iris 37 gives this name with no description except by suggestion of the name. I am therefore placing Leeds much later name before that of Stephan.

ab. major Leeds Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 107.  
Large specimens above 51 mm. in males, 56 mm. in females.

ab. brevipennis Lempke. Tijdschr. Ent. 1957. 100. p. 464.  
All wings too short.  
Lempke, of course, means shorter than normal.

ab. costa-cava Cabeau. Rev. Frans. Soc. Ent. Nam. 1904. p. 66. pl. 1. f. 1.  
The costa of the forewings deeply concave.  
Probably pathological.

ab. postmult. Fidus Lipscomb. Ent. Rec. 1980. 92 : 205. pl. 18





7. *Jurtina* Linn. continued.  
(underside forms)

*ab. flavescens* Tutt. Ent. Rec. 1910. 22. p. 179.

Female. Underside of the hindwings with the basal area, and the forewings with the apex, of a chamois-leather tint. The hindwings strongly scaled with yellow towards the base.

*ab. grisescens* Tutt. Ent. Rec. 1910. 22. p. 179.

Female. Underside with the basal area of the hindwings and apex of the forewings strongly tinged with grey.

*ab. infrareticulata* Loepke. Tijdschr. Ent. 1957. 100. p. 462.

Underside of the hindwings nearly unicolorous grey with little dark strigae, which are also present on the forewings along the costa and outer border.

*ab. latinargo* Peerdeman Ent. Ber. (Inst.) 1962. 22. p. 4. plate opposite p. 4. f. 12.

On the underside of the forewings the dark border on the outer margin and inner margin is considerably broadened.

*ab. subtus-albida* Silbernagel. Acta Soc. Ent. Bohem. 1949. 40. p. 1.

On the underside of the forewings the dark margin is present but the rest of the wing is whitish, slightly tinged with yellowish, instead of the usual ochr.-yellow. Upperside colour normal.

*ab. ochrea* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 100.

Female. Underside with the wings overspread with bright ochraceous or bright yellow.

*ab. antiultrafulvescens* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 101.

Underside of the forewings with the basal area definitely darker than normal but but of a somewhat brightish brown colour.

*ab. anticastanea* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-49. 1950. p. 101.

Underside of the forewings with the basal area darker, at least as dark as full coffee colour.

*ab. antiobscura* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 101.

Underside of the forewings with the normally fulvous areas mainly or wholly obliterated by dark, but a slight show of the fulvous may remain.

*ab. antinigromargo* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 103. pl. 1. f. 2.

The borders of the forewings strongly blackish or black. Applies also to the upperside.

*ab. nigrianira* Johnstone. Entom. 1941. 74. p. 2-3.

= *atroscens* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 101.

The underside of the hindwings black. Forewings with the black border reducing the orange part which itself is suffused with blackish.

Placed also as an upperside on p. 3 of these notes.



ab. postatrescens Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 102. pl. 6. f. 2.  
The underside of the hindwings well blackish or black.

ab. grisea Tutt. Brit. Butts. 1896. p. 404.

Female. Underside with pale grey median band on the hindwings.

ab. postalbescens Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1958-9. 1950. p. 99.

Underside of the hindwings with the median band broad and white or nearly so, mostly containing some darker speckling.

The darker speckling would bring the form very near Tutt's grisea but in case Leeds saw specimens with a really white band, it is given the benefit of the doubt.

ab. violacea Wheeler. Butts. Switz. 1903. p. 113.

Female. The underside of the hindwings with the median band strongly tinted with heliotrope.

ab. fracta Zweigelt. Z. Ost. Ent. Ver. 1918. 3. p. 11. fig. 3.

Female. On the underside of the hindwings the median band is divided in the middle (cell 4) by a dark stripe which cuts it into two parts.

ab. postaurolancea Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 120. pl. 3. f. 4.

Female. On the underside of the hindwings the median band is mainly or wholly split up into long rays or wedges through the veins being dusted with dark.

ab. biocellata Tutt. Ent. Rec. 1910. 22. p. 158.

Two well-marked ocelli on the underside of the hindwings.

The typical form has two ocelli, Tutt's form can only be separated by the "well marked", a very feeble difference.

white. ...

ab. infra-pupillata Lempke. Lamb. 1935. 35. p. 150.

On the underside of the hindwings one or more spots are pupilled with white. Normally the spots are black with no white centres.

ab. infra-impunctata Lempke. Lamb. 1935. 35. p. 150.

= postobsoletissima Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 106.

Underside of the hindwings with no black spots.

ab. obsoletissima Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 106.

Underside with the apical spot of the forewings absent and all the spots of the hindwings.

ab. anomata Verity. Entom. 1904. 37. p. 56.

This is given as an upperside form also on page 5 of these notes with its various synonyms.

ab. ocellata Tutt. Ent. Rec. 1908. 20. p. 247.

On the underside of the hindwings there are six black spots, the second and fifth being the strongest.



The following forms are the pale, washed-out, or white-blotched examples so often met with in this species. They are most probably pathological so separated from the rest.

ab. wauteiri Lambillon. Rev. Mens. Soc. Ent. Bel. 1905. p. 19. pl. 3.

The wings almost symmetrically marked with white. The forewings with a narrow elongated stripe covering the apical eye and the hindwings with a curved stripe and a small white band or stripe not quite reaching either the costa or the inner margin. The ground colour strong olivaceous grey slightly mixed with yellowish.

The figure shows the left forewing, apical eye enclosed in the white stripe but on the right forewing it is not completely enclosed.

ab. pallida Frohawk. Comp. Book Brit. Butts. 1934. pl. 2. f. 19.

On the upperside of the forewings a large symmetrical triangle of white almost filling each wing, leaving only the margins brown. Hindwings all white with a slight duskiess at the base. The example is a ♂.

ab. frohawk Blackie. (nom. nov. pro alba Frohawk) Entom. 1950. 83. p. 87.

= alba Frohawk. Vars. Brit. Butts. 1938. pl. 9. f. 3. (nom. proc. Blackie 1920)

Female. Almost the same as the preceding pallida Frohawk which was a male. Most of each forewing is white only the margins brown, the right forewing showing rather more brown along the inner margin. Hindwings white with a brownish basal suffusion, more so on the left wing than the right.

ab. semi-alba in Frohawk Vars. Brit. Butts. pl. 9. f. 2.

Wrongly determined, Frohawk calls this semi-alba Brauer which is quite different. See page 2 of these notes.

ab. lacticolor Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. . 100.

All wings with a large creamy or pale grayish, not white, area.

Leeds cites Frohawk's pallidus in Vars. Brit. Butts. pl. 10. f. 1. as being of this form which is quite wrong. This figure is of a pure albino. See page 2 of these notes, pallidus Frohawk is a synonym of grisea-argentea Oberrühr.

ab. dextro-albescens Tutt. Ent. Soc. 1908. 20. p. 221.

Large pallid areas on the upperside of the right pair of wings.

ab. costatransformis Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. . 102.

Forewings with a paler band along the costal area, not pure white.

ab. subsuffusa Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. . 102. pl. 6. f. 4.

A bleached or whitish patch starting at the apex of a forewing or forewings.

ab. albicosta Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. . 102.

Not valid. Leeds had never seen such a form, it is hypothetical.

See Leeds's absurd remarks concerning this form no. 17 on p. 102 of the Proc. S. Lond. Soc.

ab. transparens Leeds. Proc. S. Lond. etc.

Not valid. Hypothetical. Leeds gave the name "in case of its definite appearance".

ab. suffusa Leeds. Proc. S. Lond. etc.

Not valid. Hypothetical. Leeds gave the name "in case of definite appearance".



*jurtina* Linn. continued.  
(pale, washed-out or white-blotched forms)  
probably pathological.

ab. *margotransformis* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 102.  
The outer borders of the wings bleached, pallid or washed-out.

ab. *partimtransformis* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 102. pl. 6. 5  
Portions of a wing or wings with patches, streaks, or stripes of whitish, bleached, or  
scaleless.

ab. *transformis* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 103. pl. 6. 7-8.  
One, two, three, or all wings, of a bleached, pallid, or misty nature.  
Leeds cites Frohawk Vars Brit. Butts. as an example which is quite wrong. This is on  
plate 10. fig. 2 and named *pallidus* by Frohawk. It is a pure albino, is not bleached,  
pallid or misty and is a synonym of *grisea-argentea* (Berthoulet). See p. 2 on this  
notes.

ab. *radiata* Frohawk. Vars. Brit. Butts. 1938. pl. 9. 1. 1.  
All wings rayed horizontally with whitish, the rays becoming more concentrated in  
the area of the apical eye of the forewings.  
Leeds includes this form in his *partimtransformis* which has portions of a wing or  
wings showing odd patches. Frohawk's form is symmetrically marked and in any case  
has priority over Leeds name.

ab. *glabrata* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. 1948-9. 1950. p. 103.  
Wings with a greasy, varnished appearance.

ab. *cinerascens* Fuchs. Arb. Mass. Var. Nat. 1894. 45. p. 85.  
On the upper and underside of the hindwings the brown ground is replaced by grayish.  
This sometimes extends to the forewings.





jurtina  
 subsp. splendida Buchanan-White. Scot. Nat. 1871.1.1. p. 200.  
 From Longa Island and the west coast of Ross-shire, Scotland. Larger and brighter, the apical spot with two white points.  
 Re-described at greater length by Graves in Entom. 63. p. 50 as follows -- The under side shows one of the main differences, especially in the male which is much darker than any other British race etc. See full description.  
 See examples from S. Uist, Hebrides in the N.C.M. Collection which belong to the same race.

jurtina  
 subsp. iernes Graves. Entom. 1960. 63. p. 54.  
 The race from Ireland. Larger size, brighter and more variegated underside, the male usually with well-developed fulvous patch round the apical eye of the forewings, the female with fulvous band on the hindwings. See full description for further details.

jurtina  
 subsp. cassiteridum Graves. Entom. 1930. 63. p. 75.  
 The race from the Scilly Islands. Similar to iernes from Ireland but smaller, the male with the ocelli of the underside pronounced.







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pamphilus Linnaeus. Syst. Nat. 1758. Pl. 10. n. 472.

aberrational forms etc.

- ab. albescens Robson & Gardner. Young Nat. List. 1886. p. 4. Suppl. to vol. 7.
- = eburnea Habich. Jahresb. Wien. Ent. Ver. 1897. 7. p. 29. pl. 1. f. 7.
- = albula Strand. Nyt. Mag. Naturv. 1904. 42. p. 132.
- = pallida Oudemans. Tijdschr. Ent. 1905. 48. p. 15. pl. 4. f. 14. (nom. preoc. Tutt.)
- = pallidus Delahaye. Suppl. Cat. Lep. Maine-et-Loire 1909. p. 12.
- = laticolor Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-9) 1950. p. 110.

The ground colour whitish-yellow instead of the normal orange.

This is the palest of the yellow forms.

Habich's eburnea was described as an albino similar to the specimen figured in Esper Eur. Schmett. 1. pl. LXXVIII Cont. XXVIII f. 4. This shows the wings almost white. Habich's own figure is nothing like this and probably the fault of the printing, the hindwings are heavily smoked over and certainly would not come under the term "albino", the figure in Esper must therefore be accepted as his eburnea. The other forms, given as synonyms of albescens, are of various shades of whitish-yellow and hardly separable.

- ab. albata Goodson. Entom. 1955. 88. p. 75. pl. 3. f. 7.

Albino. All dark markings of both upper and underside replaced by creamy-white, most noticeable and striking on the underside.

- ab. pallescens Castle-Russell. Ent. Rec. 1921. 34. p. 51.

"a fine pale golden male."

The description of an aberration sold at a sale. That colour "golden" is, (in pamphilus) is rather difficult to decide, so it is left alone and not made the same as the next form, which it may possibly be.

- ab. pallidula Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-9) 1950. p. 110. (fig. South 192. f. 6)

Ground colour paler than type, ochreous or very pale orange.

- ab. pallida Tutt. Brit. Butts. 1896. p. 422.

Pale yellowish-tawny, with pale grey margins, resembling the C. typhon form isis. The pale grey margins apparently are prominent enough to make the form look like typhon(tullia).

- ab. rufa Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 111. (fig. Ford. pl. 15. f. 9)

The ground colour covers a considerable range, the lighter ones being rosy, terra-cotta or red, others are bright brownish with a good tinting of reddish terra cotta. The figure in Ford, mentioned by Leeds, is merely reddish-orange.

- ab. rubescens Lowe. Ent. Rec. 1907. 19. p. 104.

Rich coloration and slightly suffused with a distinct purplish tinge.

- ab. brunescens Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 111.

The ground colour brownish or brown.

Leeds cites the figure in South pl. 92. f. 12, which is hardly brown, more of a pinkish-fawn. The form is therefore not very dark.





ab. transiens Caruel. Misc. Ent. 1944. 41. p. 37.

Ground colour of the upperside red-brown or mahogany-brown, without a trace of the normal yellowish colour.

ab. obscura Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 112.

The ground colour dark smoky greyish, but centrally may show some ochreous.

ab. havelaarii Lambillion. Rev. Mens. Soc. Ent. Nam. 1902. p. 11.

Forewings with the apical angle, as far as the cell, of the colour of very light dregs of wine. This colour also invades the base of the wings and is tied to the apical area by the median vein which is also tinted. The costa more whitish than in the type, the hindwings darker than normal.

This is the original description.

ab. bicolor Peerdeman. Ent. Ber. (Amst.) 1962. 22. p. 42. pl. f. 5.

Both forewings of a different colour from that of the hindwings. Pathological forms not included.

ab. alba Pruffer. Bull. Acad. Pol. (Sci.). 1920

The middle area of both fore and hindwings white.

ab. bi/irregularia Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 113.

Wing or wings of one side of a different colour from those of the opposite side.

ab. irregularia Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 113.

An unusual patch of darker or brighter coloured scaling on a wing or wings.

ab. subsuffusa Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 112.

Forewing with a bleached, whitish or scaleless patch starting at the apex.

Obviously a pathological form which should not have been named.

ab. costatransformis Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 112.

A narrow pale band along the costa but not pure white.

ab. transformis Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 112. pl. 7. f. 4.

One two or three wings bleached, greasy, or thinly scaled. At least one wing must be so.

ab. partimtransformis Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 112. pl. 7. f. 3.

Portions of a wing or wings with pale bleached or scaleless patches.

Obviously pathological.

ab. margotransformis

ab. transparens

ab. suffusa

ab. glabrata

These names given by Leeds in Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 112. are not valid since Leeds had not seen or heard of such forms existing in this species.

ab. postalbomargo Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 112. pl. 7. f. 5

On the hindwings the dark marginal border changes to white or whitish-grey in its lower half. In some specimens the veins divide the whitish colour into rather large squares.



*ab. latecana* Verity. *I. Wiss. Ins. Biol.* 1926. 21. p. 204.

The marginal border of all wings of a pale grey instead of blackish, and wider than normal.

*ab. semimarginata* Rebel. *Jahresb. Nien. Ent. Ver.* (1919) 1924. 30. p. 41.

= *nigromarginata* Lempke. *Lamb.* 1931. 31. p. 68.

= *nigromargo* Leeds. *Proc. S. Lond. Ent. & Nat. H. Soc.* (1948-9) 1950. p. 113.

The marginal borders of all wings strongly black-brown, but not widened.

Lempke sinks his *nigromarginata* as a synonym, *Tijdschr. Ent.* 100. p. 485.

*ab. latiora* Leeds. *Proc. S. Lond. Ent. & Nat. Hist. Soc.* (1948-9) 1950. p. 114. pl. 7. f. 9.

The blackish marginal border of the hindwings extending broadly inwards as far as the transverse marking. The female does not develop this to the same extent as the male.

*ab. postcuneata* Leeds. *Proc. S. Lond. Ent. & Nat. H. Soc.* (1948-9) 1950. p. 114. pl. 7. f. 7.

On the hindwings the blackish border shows at least four dark wedge-shaped marks pointing inwards.

*ab. nigrita* Stauder. *Int. Ent.* 4. 1924. 17. p. 152-3.

Upperside of forewings with black streaks radiating from an abnormally broad margin to the base. Hindwings almost entirely black, only the base remaining ochreous. Underside correspondingly dark.

*ab. venata* Lempke. *Tijdschr. Ent.* 1957. 100. p. 485.

The nervures on the upperside of the wings (fore or hind or both) are blackish.

*ab. bipertita* Verity. *Ent. Rec.* 1919. 31. 121.

The marginal band of the upperside divided into two.

Verity does not state whether transversely or across but in his *Farf. It.* 5. p. 112 he says "the dark border of the hindwings divided into two, by a narrow fulvous line."

*ab. ultraangustimargo* Leeds. *Proc. S. Lond. Ent. & Nat. H. Soc.* (1948-9) 1950. p. 113. pl. 7. f. 6.

The marginal border of the forewings absent, leaving only the thin marginal line.

*ab. deteresa* Verity. *Bull. Soc. Ent. Fr.* 1913. 45. p. 226.

The marginal border of all wings fails. The apical spot of the forewings is fawn-coloured.

*ab. nosalica* Pruffer. *Bull. Acad. Polon. Sc. & Lettres, Ser. B. Sci. Nat.* 1922. p. 282. pl. 15. f. 2

= *postexcessa* Leeds. *Proc. S. Lond. Ent. & Nat. H. Soc.* (1948-9) 1950. p. 115. pl. 7. f. 16.

Hindwings with one or more small black spots before the margins.

*ab. postquadriexcessa* Leeds. *Proc. S. Lond. Ent. & Nat. H. Soc.* (1948-9) 1950. p. 116. pl. 7. f. 17. .,

Hindwings with four small black spots before the margins.

This is covered by Leed's own name of *postexcessa* which is a synonym of the preceding *nosalica*, but may stand as an extreme form, the four-spotted form not being common.

*ab. postnixtaexcessa* Leeds. *Proc. S. Lond. Ent. & Nat. H. Soc.* (1948-9) 1950. p. 116.

Hindwings with one or more black spots before the margin on one side, but normal on the other.



ab. *antimixtaexcessa* Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 116.  
Forewing with an extra black spot, but the other forewing normal.

ab. *mixtaexcessa* Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 116.  
A fore and hindwing with an extra black spot, but those on the opposite side normal.

ab. *bipunctata* Gussich. Glasnik Hrvats. Prirodosl. Društva. 1917. 29. p. 221.  
On the upperside of the hindwing, two rather large white spots. (original description)  
This would appear to be a pathological form, with two bleached patches.

ab. *tardenota* Carnel. Misc. Ent. 1944. 41. p. 36. pl. C. f. 2.  
On the upperside of the forewing there is a round black spot near the apex. It is not one merely showing through from the underside.  
This is such a common form that it is hardly separable, there being every degree of variation from those with little or no spot, to those with a well marked blackish one. The name can be used for specimens with a decided black spot, not greyish ones.

ab. *glaucanis* Lowe. Ent. Soc. 1914. 47. p. 19.  
An enormous apical spot on the upperside of the forewings. On the underside it is pupilled with a white spot 3 mm. wide.

ab. *obsoleta* Tutt. Brit. Butts. 1896. p. 422.  
= *caeca* Strand. (nom. prec. Oberth.) Nyt. Mag. Naturv. 1904. 42. p. 131.  
= *antiobsoletissima* Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 117.  
On the upperside of the forewing the apical spot is completely absent. . .  
It is obvious that Tutt meant upperside and not underside in his description, since he talks of "underside" forms later in his article.

ab. *multipuncta* Schultz. Soc. Ent. 1904. 19. p. 11.  
= *excessa* Leeds. (in part). Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 115.  
Upperside with large apical spot and an extra small spot at the inner angle of the forewings, which is showing through from the underside. In the hindwings there are two black marginal spots, quite large and just interior to the marginal band. On the underside the extra forewing spot is more definite.

ab. *amaryllides* Stauder. Bull. Soc. Adriat. 1911. 45. p. 117. pl. 3. f. 3 (Ent. 1911. 24. p. 39)  
On the upperside of the forewings there are four spots, including the apical one which is blind and very large. Hindwings with a broader, stronger marginal band and a row of marginal spots preceding it. On the underside the main apical spot of the forewing is doubled but both spots are enclosed in the same yellow ring, the upper one pupilled with white, the lower unpupilled. Beneath this double spot there are two others as on the upperside.

ab. *major* Agassiz. Mitt. Schweiz Ent. Ges. 1900. 10. p. 244.  
= *major* Fionneau. Echange 1929. 45. no. 435. p. 3.  
= *major*, Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 117.  
Large specimens of 34 mm.  
Leeds major was over 35 mm. in ♂, over 37 mm. in ♀.

ab. *minor* Agassiz. Mitt. Schweiz Ent. Ges. 1900. 10. p. 244.  
= *minor* Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 117.  
Small specimens of 23 mm.  
Leeds minor was under 28 mm. in the ♂, 30 mm. in the ♀.

ab. *antibipunctata* Lempke. (nom. nov. pro *bipupillata* Leeds) Tijdschr. Ent. 1957. 100. p. 482.  
= *bipupillata* Leeds (nec. Cosm.) Proc. S. Lond. Ent. Nat. H. Soc. (1948-9) 1950. p. 115. pl. 7. f. 14.  
Upperside of the forewings with an extra spot, unpupilled, beneath the normal one.  
Leeds wrongly includes this form under Cosmovici's *bipupillata*, which was an underside form and Lempke rightly renames it.



*ab. lineigera* Strand. Ent. 3.1912.15.p.257. (Fig. Hidschr. Ent. 48. v. 4. f. 13. ad. m. s.)  
Named from the figure by Oudemans. The main points are that on the underside of the forewings the oblique bar reaches from the costa down to cell 2, whilst on the hindwings there is a pronounced black thin line running from the costa and preceding the white area, thus dividing the white area from the basal area by its standing out in a much darker colour, the basal area being grey.

*ab. anticrassipuncta* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. (1948-9)1950.p.115.pl.7.f. 13.  
The apical spot on the underside of the forewings very large.

*ab. antiparvipuncta* Leeds. Proc. 3. Lond. Ent. & Nat. Hist. Soc. (1948-9)1950.pl.114.pl.7.f.12  
The apical spot on the underside of the forewings very small.

*ab. apicoextensa* Leeds. Proc. 3. Lond. Ent. & Nat. H. Soc. (1948-9)1950.p.116.  
The apical spot of the underside of forewings elongated, but not downwards.

*ab. impupillata* Lempke. Lamb.1933.33.p.78.  
The apical spot on the underside of the forewings contains no white pupil.

*ab. ocellata* Tutt. Brit. Butts.1896.p.422.  
= *rufoocellata* Leeds. Proc. 3. Lond. Ent. & Nat. H. Soc. (1948-9)1950.p.116.  
On the underside of the hindwings there is a row of white pupils, set in strongly brownish-red spots, preceding the margins.

*ab. semilyllus* Krulikowsky. Soc. Ent. 1908.13.p.3.  
On the underside of the hindwings there is a row of white marginal spots, the wings are paler than in the type form. Upperside also paler than the type form.  
Very similar to the preceding but the white spots apparently not brown-ringed.

*ab. bipupillata* Cosnovici. Le Met.1892.p.264.  
On the underside of the forewings the apical spot is doubled but fused together, each spot having a white pupil.

*ab. biocellata* Strand. Nyt. Mag. Naturv.1904.48.p.131-2.  
The apical spot of the forewing underside is doubled and enclosed in the same yellow ring, the lower spot however is without a white pupil.

*ab. neoa* Strand. Arch. Naturg.1919.85.14.p.17.  
= *antilexcessa* Leeds. (in part). Proc. 3. Lond. Ent. & Nat. H. Soc. (1948-9)1950.p.115.pl.7.f.15.  
Underside of the forewings with an extra small spot in cell 2, near the inner margin.

*ab. balearica* Muschamp. Ent. Rec.1904.16.p.221.  
Underside of forewings, below the apical spot, between veins  $IV_1$  and  $IV_2$ , there is a black unpupilled spot surrounded by a narrow band of light tawny, similar to that surrounding the apical spot.

*ab. addenda* Reverdin. Bull. Soc. Lep. Gen.1910.2.p.49.pl.2.f.6.  
Underside of the forewings with the apical spot doubled and two extra spots beneath this, making four spots on each wing. On one of the forewings there is a fifth spot placed just above the apical one.  
Leeds once again meddles with other author's names and causes confusion. In his incomprehensible work on this and other species he changes "addenda" to examples "with an additional spot placed higher than the apical one". This of course cannot stand.





ab.addenda Leeds. (nom. preoc. Reverdin) Proc. S. Lond. Ent. N. H. Soc. (1948-9) 1950. p. 116.  
 Underside of forewings with an additional spot placed higher than the subapical one. Reverdin's figure shows such a spot but with two other spots below the main one. Leeds apparently wants to restrict the name to just the one spot above the main one. he cannot do this under the same name as Reverdin's, so the form requires a new name.

ab.pluripuncta Leeds. Proc. S. Lond. Ent. N. H. Soc. (1948-9) 1950. p. 116.  
 The names suggested by Leeds which belong to *M. jurtina* and *tithonus* cannot stand since they are hypothetical, none having been found.

ab. antitriexcessa

ab. triexcessa

ab. antiquadriexcessa

ab. quadriexcessa

These names suggested by Leeds are hypothetical and cannot stand.

ab. antiexcessa Leeds. Proc. S. Lond. Ent. N. H. Soc. (1948-9) 1950. p. 115. pl. 7. f. 15.

The underside of the forewings with one or more extra black spots.

The name can only be used for forewings showing three black spots including the apical one, names having been already given to examples with one extra spot = *neca* and *biocellata*, and three extra spots = *addenda* Reverdin. It is however somewhat doubtful if Leeds had seen a forewing with two extra spots, his figure shows an example of *ab. neca* Strand.

ab. caeca Oberthur. Etudes 1896. 20. p. 35. pl. 6. f. 106. (Lep. Comp. 1910. 4. (1). p. 48.)

= *caecaella* Strand. (nom. nov. pro *caeca* Ob.) Arch. Naturg. 1925-27. 91. pl. 2. p. 281.

= *antiobsoletissima* Leeds. Proc. S. Lond. Ent. N. H. Soc. (1948-9) 1950. p. 117. pl. 7. f. 18-19.

The main apical ocellus of the forewing absent on the underside and on the upper side also. This is the original description in Etudes on p. 35 but the figure is a strange one. This shows the apical spot absent but beneath it, on one forewing, a large black spot, and on the other forewing three somewhat smaller black marks. These are not mentioned at all in the description which seems strange because the form must be much rarer than one with just the apical spot absent. The description however must be taken which merely stresses the absence of the main apical spot above and below. Strand renamed Oberthur's *caeca* under the impression that it was not described until 1910 and was therefore preoccupied by Strand's name *caeca* 1904. Actually it is Strand name which is preoccupied by Oberthur's *caeca* 1896.  
 Leeds *antiobsoletissima* had the apical spot of the underside reduced to a brightish-brown slight spotting or ring or in extreme cases entirely absent.

ab. postobsoletissima Leeds. Proc. S. Lond. Ent. N. H. Soc. (1948-9) 1950. p. 117. pl. 7. f. 2.  
 Underside of the hindwings devoid of the white marginal spots.

ab. obsoletissima Leeds. Proc. S. Lond. Ent. N. H. Soc. (1948-9) 1950. p. 117. pl. 7. f. 20.  
 Underside of both fore and hindwings devoid of spots.

ab. obliquajuncta Leeds. Proc. S. Lond. Ent. N. H. Soc. (1948-9) 1950. p. 114. pl. 7. f. 11.  
 Underside of the forewings with the transverse bar reaching from the costa obliquely to the anal angle.

ab. crassichevro Leeds. Proc. S. Lond. Ent. N. H. Soc. (1948-9) 1950. p. 114. pl. 7. f. 12.  
 Underside of hindwings with the marginal chevrons distinctly brown or dark grey and joined together to form a long line-like development.

ab. nolkeniana Strand. Ent. Mitt. 1917. 7. p. 495.

Underside of hindwings with the white band more developed and reaching the internal border.



ab. unicolor Tutt. Brit. Butts. 1896. p. 42.

= postunicolor Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 111. pl. 7. f. 1.

Underside of the hindwings devoid of the whitish band.

ab. murina Verity. Bull. Soc. Ent. It. 1913. 45. p. 228.

Underside of the hindwings more obscured, of a bluish tint towards the base and with little or none of the whitish marking.

ab. fumidescens Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 113.

♀ only. Underside of hindwings with the basal area much darker than normal.

Leeds says that this does not apply to ♂♂ as they are normally darker based.

ab. antialbocuneata Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 114. pl. 7. f. 10.

Underside of forewings with a series of long whitish wedges extending from the border inwards, their points extending along the veins into the fulvous ground colour.

ab. antialba Leeds. Proc. S. Lond. Ent. & Nat. Hist. Soc. (1948-9) 1950. p. 110.

Underside of the forewings extensively white.

ab. antilacticolor Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 110.

Underside of the forewings exceptionally pale, mainly creamy or straw.

ab. antipallidula Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 110.

Underside of forewings paler than type, yellowish or ochreous.

ab. antirufa Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9). 1950. p. 111. (fig. Ford. 115. 1. 1)

Forewings bright reddish or red, surpassing any bright orange colour.

ab. anticastanea Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 111. pl. 7. f. 1.

Underside of forewings coffee or dark brown between the base and the transverse stripe.

ab. aurea Leeds. Proc. S. Lond. Ent. & Nat. H. Soc. (1948-9) 1950. p. 113.

Underside of the hindwings with the basal area of a golden tint well developed.

Figured in Frohawk's Brit. Butts pl. 41. f. 21.

ab. tunioti Caruel. Misc. Ent. 1944. 41. p. 39. pl. C. f. 5.

On the underside of the forewings the black ring around the arical spot is interrupted towards the fringe, consequently having the shape of a letter C.



## pamphilus

londinii Verity. Z.Wiss.Ins.21 p.205 1926.

The race from Southern England. Underside of the hindwings suffused with rich warm chestnut tinge to an extent not seen in any other race. Also on the underside of the forewings, a sharp black streak divides the wings from the costa to the second cubital nervure, showing a colder pattern than other races.

This is not nearly so constant as verity suggests and it is a doubtful subspecies.

## pamphilus

scota Verity. Soc.Ent.It.42 p.271 1911.

Verity states that this is the race from the north coast of Scotland but Heslop-Harrison in Ent.Rec.60 p.111 says that in his opinion the specimens were from the north of England.

On the underside the whitish space of the hindwings is excessively broad, its forepart extending, both on fore and hindwings, as far as the ocellus or ocelli.

## pamphilus

rhodensis Heslop-Harrison. Ent.Rec. 60 p.111 1948.

The race from the Hebrides, Type from I. of Rhum.

Underside of forewings duller brown and the pale area around the ocellus narrower than north English specimens. Underside of hindwings with the basal section grey sprinkled, never of a brown hue, the median band inconspicuous, reduced in width, often obsolescent, often also greyer merging into the grey of the marginal section.

On the whole the race tends to agree in the uniformity of the underside coloration, with the race scotica of C.tullia.



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		thornensis Pill.	2.
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infranigrescens Lpke.	3.	unicolor Hoffm.	4.
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macrocellata Lpke.	3.		
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orcadæ Robs. & Gard.	2.		



tullia Muller. Faun. Ins. Frid. 1764. p. 36.  
= tiphon Rottenburg. Naturf. 1775. 6. p. 15.

The type form does not occur in Britain.

#### tullia

subsp. davus Fabricius. Gen. Ins. 1777. p. 259.

= philoxenus Esper. Eur. Schmett. 1780. 1. (2). p. 25. pl. 54. f. 3. & pl. 78. f. 3.

= rothleibi Staudinger. Cat. Pal. Lep. Ed. 1. 1861. p. 14.

The ocelli of the underside of the hindwings well developed, usually six in number. In Britain this is the well-marked rather dark form from Wiltshire etc.

#### tullia

subsp. polydama Haworth. Lep. Brit. 1803. p. 16.

= polymeda Jermyn. Butt. Coll. Vade Mecum. 1825. p. 40. & 47.

In Britain the subspecies from Yorkshire, Doncaster etc., with the ocelli of the underside of the hindwings less developed than in davus (philoxenus) from Wiltshire. Haworth received it only once from Yorks and described it as different from "tiphon" which he says he also had from Yorks by the same collector. The true tiphon does not occur in Britain so the two forms thought by Haworth to be different species, were only variations of the same Yorkshire race, polydama must therefore be the name for this race and includes similar specimens from localities which do not produce the heavily ocellated forms. The undersides in appearance seem to be half way between the sparsely ocellated subsp. scotica (below) and the well-marked davus but they are extremely variable both in ground colour and extent of ocellation. English tullia cannot be cleanly cut into completely distinct races, certain examples from one locality appearing similar to those from a completely different one. The description of polydama says that on the underside there are two ocelli on the forewing and six on the hindwing, three of which are only half sized or almost obsolete with, white rings. There is a white median fascia, the outer half of the wings grey. The upperside has the forewings greyish-fuscous with two blind ocelli.

tullia subsp. scotica Staudinger. Cat. Pal. Lep. 1903. Ed. 3. p. 66.

The subspecies from Scotland and northern islands. The Irish specimens could seem to be the same, although they show a somewhat heavier ocellation on the underside. The underside with the ocellated spots very small or partially absent. The upperside with narrow grey border to forewings and broader border to hindwings.



aberrational forms .

ab. orcadae Hobson & Gardner. Young Nat. List. 1886. p. 4. Suppl. to vol. 7.  
Described presumably as a subspecies from Orkney but our series does not contain a specimen agreeing with the description. The Orkney examples belong to subsp. scotica, orcadae is therefore an aberration.  
The description says the upperside pale fawn with lighter margins. Underside with no band or fascia, only a small central patch remaining.  
We have specimens from Doncaster which agree with this description, the aberration is therefore not confined to Orkney.

ab. antedefasciata Lempke. Tijdschr. Ent. 1957. 100. p. 473.  
On the underside of the forewings the white band fails completely, also the white markings of the hindwings as a rule reduced.  
Presumably the ocelli are present.

ab. thornensis Pilleau. Ent. Rec. 1952. 64. p. 69.  
On the underside of the hindwings there are no ocelli and the transverse whitish band is absent on both fore and hindwings.

ab. sagittata Goodson. Ent. Gaz. 1960. 11. p. 18.  
On the underside of the forewings the white transverse stripe is considerably broadened and rayed outwards along the veins towards the margin to form a series of five very large sharp wedges. The white is also extended outwards on the hindwings but in a less conspicuous manner.

ab. albofasciata Lempke. Tijdschr. Ent. 1957. 100. p. 473. pl. 18. f. 9.  
On the underside of the hindwings an uninterrupted white band from the costa to the inner margin.

ab. cockaynei Hopkins. Entom. 1955. 88. p. 76. pl. 3. f. 1-4.  
Underside of the hindwings with the white markings unusually extensive. The white median band extends inwards as streaks along both the upper and lower margins of the cell to, or near, the base (where these streaks are obscured by the longish basal hairs), and the costa is narrowly white from the base to the median band, thus cutting off two islands of the dark ground colour. I regard any specimen in which one or both of the white cell streaks extends to or near the base, as belonging to ab. cockaynei. The aberration is completely connected with the normal form by intermediates.

ab. laidion Borkhausen. Naturg. Eur. Schmett. 1788. 1. p. 91. . .  
The upperside of the wings without ocelli. On the underside the ocelli are greatly reduced in number, the forewing with one apical, the hindwing with only two apical spots, the usual white transverse band absent except for two additional apical spots.

ab. obsoleta Tutt. Brit. Butts. 1896. p. 420.  
On the underside of the forewing the apical spot is entirely absent and on the hindwing all the ocelli, except a small one near the anal angle.  
This occurs most frequently in the subsp. scotica Stgr.

ab. parviocellata Pionneau. Echange 1937. 53. no. 469. p. 11.  
= parvocellata Lempke. Tijdschr. Ent. 1957. 100. p. 474. pl. 18. f. 10.  
On the underside the ocelli of all wings except the apical eye of the forewing, are very small, sometimes almost invisible.



ab. macrocellata Lempke. Tijdschr. Ent. 1957. 100. p. 474. pl. 18. f. 11  
The ocelli of the underside of the hindwings distinctly enlarged.

ab. anticrassimaculata Lempke. Tijdschr. Ent. 1957. 100. p. 474.  
On the underside of the forewings the apical ocellus is strikingly enlarged.

ab. impupillata Lempke. Tijdschr. Ent. 1936. 79. p. 287.  
All or most of the ocelli of the underside are without pupils.

ab. annulomulla Goodson. Ent. Gaz. 1960. 11. p. 16.  
On the underside the yellowish rings which surround the spots of both fore- and hindwings in normal specimens are absent, leaving only small rather suffused blue spots, completely altering the appearance of the species. The small apical spot of the forewings has a tiny white pupil, but of the chain of six spots on the hindwing only two are faintly pupilled.

ab. lanceolata Arkle. Entom. 1919. 46. p. 95.  
On the underside the spots of both wings lanceolated.

ab. addenda Lempke. Tijdschr. Ent. 1936. 79. p. 287.  
The underside of the forewings with four or more ocelli.

ab. maculata var. connecta. Iris. 1944. 56. p. 103.  
On the upperside of wings the underside pattern, i.e. the whitish band on the forewings and band of white spots of the hindwings, is not merely showing through but clearly visible as a sharply defined whitish-yellow band.

ab. pallida Estheller. Schmett. Sudburyana. 1926. 1. p. 133.  
The ground colour of the upperside paler, not rare in 49.  
This no doubt applies to the pale females which as Estheller says are not rare, not to the much rarer cream-grey forms of which we have three specimens.

ab. rostrigrisea Tutt. Ent. Soc. 1908. 40. p. 271.  
The upperside of the hindwings uniformly silvery-grey, on the distal portions indicated in the margins.

ab. castanea Verity. Parf. It. 1959. 5. p. 121.  
The ground colour of the upperside reddish-brown.

♀ ab. variscolor Lempke. Tijdschr. Ent. 1957. 100. p. 474.  
The ground colour of the upperside of the wings of female the same as that of the male.

ab. exterrusca Verity. Parf. It. 1959. 5. p. 121.  
The distal part of the upperside of the wings is darkened by a broad blackish band.

ab. introdigrescens Lempke. Tijdschr. Ent. 1957. 100. p. 474.  
Ground colour of the wings normal but on the underside of the forewings a broad dark band. In his English translation Lempke says "strongly suffused with blackish tint".





ab. *infrabrunnea* Lempke. Tijdschr. Ent. 1957. 100. p. 473.

The underside of the hindwings uniform brown with the usual white markings and ocelli.

ab. *unicolor* Hoffmann. Mitt. Ent. Ver. Steierm. 1914. 50. p. 261.

In the upperside of all wings the ocelli are absent.

This character is present in ab. *laidion* Berth. (see p. 2 of this note), but *laidion* on the underside has the normal white transverse fascia almost absent.



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1. *Aphantopus hallengrini*.

11. -

*Hyperantus* Linnaeus. Syst. Nat. 1758. Ed. 10. n. 471.  
Faun. Suec. 1761. M. 2. n. 273.

aberrational forms etc.

Type form - forewing with two scarcely ocellated spots on upperside and three ocellated spots on the underside. Hindwing with two spots on upperside, five on the underside, two close together near the costa, then an interneural space without a spot, then three more in each interneural space. The ground colour blackish-brown above and variable yellowish-brown beneath. This description, (given by Lempke in Lamb. 35. p. 200) is from the Linnaean description in Faun. Suec. 1761 which is more detailed than that of Syst. Nat. in 1758.

ab. *hyperantana* Strand. Arch. Naturg. 1919. 85. 44. p. 16.

This appears to be identical with the above description of the type form but since the hindwings are not mentioned it is given here for what it is worth.

Underside of the forewings in cell 2, a smaller ocellus, making three, whereas the upperside has only two.

ab. *vidua* Muller. Faun. Fridrichs. 1764. no. 331. p. 36.

Only two ocelli on the underside of the forewings, the hindwings with the normal five.

ab. *octoculatus* Goeze. Ent. Beitr. 1779. 1. pt. 3. p. 285.

Four ocelli on the underside of the forewing, and four on the underside of the hindwing, making eight on each side of the insect.

ab. *sexoculatus* Caruel. Misc. Ent. 1944. 41. p. 29.

Underside of forewings with two ocelli, the hindwings with four, making six on each side of the insect.

ab. *cabeau* Pionneau. Echange 1929. 45. no. 435. p. 3.

Underside of forewings with no ocelli, the hindwings with only two small ones towards the anal angle.

ab. *marpurgensis* Strand. Arch. Naturg. 1919. 85. 44. p. 16.

Underside of the forewings showing the apical spot doubled, so that below it and united with it there is a second much smaller spot. Also there is a small, extra, pale spot in cell 2. Hindwings underside with an extra smaller ocellus in cell 4 united with the normal one in cell 5.

ab. *supernumeraria* Stauder. Ent. Anz. 1921. 1. p. 35.

Underside of hindwings with an additional spot on or at ocellus 1, or a fourth ocellus, or both together.

The description is far from clear. It would appear that there is a small extra ocellus attached to ocellus 2, counting from the bottom of the wing, and sometimes one which could be called ocellus 4 in the cell which normally contains no ocellus but the author only says "a fourth ocellus" which does not make sense when there are five ocelli on the underside and his are extra ones, as the name suggests. Lempke sinks the name as synonymous with the preceding *marpurgensis* since both forms have extra spots or ocelli but I do not agree with this.



*ab. centrifera* Seitz. *Acrolep.* 1909. 1. p. 137. pl. 46. f. 115.

Another bad description. Seitz merely says "small rings filled with white dots", and then says he is giving the name to specimens usually sold as "*ab. bieta* Burd." in which the small rings are filled with white dots, usually also visible on the upperside, these are not the true *bieta* which was nothing more than a synonym of *ab. minor* Fuchs. The figure shows the lower spots of the underside of the hindwings merely white with practically no yellow ring and no black but they are larger than the tiny white points of *ab. arete* Muller.

The form then is that the underside shows three or more of the ringlets or ocelli reduced to white spots contained in a faint yellowish ring.

*ab. caeca* Fuchs. *Ent.* 1. 1884. 45. p. 251.

Underside of the forewings devoid of any sort of spots, the hindwings with some feebly indicated.

A transitional form to *ab. arete* Muller.

*ab. arete* Muller. *Faun. Fridrichs.* 1764. no. 330. p. 36.

Underside of the forewings with two small white points, the hindwings with five. These points are very much smaller than those of *ab. centrifera* Seitz and have no encircling ring.

*ab. arete* Tutt (nec Muller) *Brit. Butts.* 1896. p. 411.

Tutt gives a wrong description of Muller's *arete* saying "the underside showing white points with yellow rings". This is the form named *centrifera* by Seitz and should be ignored.

*ab. hyperantoides* Strand. *Arch. Naturg.* 1917. 85. 44. p. 15.

Only one ocellus on the underside of the forewings, the hindwings with the normal five.

*ab. obsolota* Tutt. *Brit. Butts.* 1896. p. 412.

Underside with no trace of the usual ocelli.

*ab. parvipunctata* Castle-Russell. *Bull. Anat. Ent. Soc.* 1950. 9. p. 33.

= *parvocellata* Leptke. *Tijdschr. Ent.* 1957. 100. p. 457.

The spots of the underside fully developed but exceedingly small.

*ab. decora* Carnel. *Misc. Ent.* 1944. 41. p. 28. pl. B. f. 2.

= *crassipunctata* Castle-Russell. *Bull. Anat. Ent. Soc.* 1950. 9. p. 33.

The spots of the underside considerably larger than normal.

*ab. crassipuncta* Burdhardt. *Ent. Rec.* 1948. 60. p. 25.

= *magnipunctata* Castle-Russell. *Bull. Anat. Ent. Soc.* 1950. 9. p. 33.

The spots of the underside abnormally large and surrounded by prominent golden-buff rings. The white pupils are large but round, not streaks as in *lanceolata* Shipp.

*ab. lanceolata* Shipp. *Ent. Rec.* 1894. 5. p. 99. (fig. *Entom.* 26. p. 261.)

The spots of the underside unusually large and pear-shaped.





ab. cuneata Gillmer. Int. Ent. L. 1908. 1. p. 359.

= elongata Tutt. Ent. Rec. 1910. 22. p. 77.

The spots of the underside slightly cuneiform in shape.

Tutt's elongata has the spots a little elongated or pear-shaped.

This form has not the prominent golden-buff rings of lanceolata Hipp., the ocelli are normal except in their slightly elongated shape, not nearly so drawn out as in lanceolata.

ab. caecimaculata Pilleau. Ent. Rec. 1952. 64. p. 69.

The ocelli of the underside blind, without white pupils, on both fore and hindwings.

ab. goodsoni Pilleau. Ent. Rec. 1952. 64. p. 69.

On the underside of the forewings there are no ocelli at all, the hindwings have four on each wing but completely blind, without white pupils.

ab. arcuata Zusanek. Z. Ost. Ent. Ver. 1925. 10. p. 61.

Underside of all wings showing a clearly visible transverse line in the median area. The hindwings with a triple, sharp, marginal line.

ab. brunnea Tutt. Ent. Rec. 1910. 22. p. 77.

The underside of a bright brown tint.

ab. infra-pallida Lempke. Lamb. 1935. 35. p. 202.

The underside much paler than normal, the upperside normal.

ab. nigra Pilleau. Ent. Rec. 1952. 64. p. 69.

The ground colour of both the upper and underside blackish-brown, the ocelli normal.

ab. languescens Cabeau. Rev. Mons. Soc. Ent. Nam. 1923. 23. p. 57.

The upperside brown, slightly greenish.

Cabeau mentions the spotting but apparently this is of no consequence since the latin description merely mentions the colour and not the spotting.

ab. pallens Schultz. Ent. L. 1908. 21. p. 278.

The upperside yellow-brown, the fringes yellow. Underside also pale yellow-brown, feet etc. also.

ab. ochracea Hauser. Beitr. Macrolop. Faun. Ost. Hns. 1901. n. 22.

The upperside yellow-ochre.

ab. hyperantella Strand. Arch. Naturg. 1919. 85. 44. p. 15.

= sublanguescens Pionneau. Echange 1930. no. 439. p. 4.

The upperside of the hindwings showing only one feeble ocellus in cell 1 near the anal angle.

Pionneau named sublanguescens, which has one ocellus on the upperside of hind wing, under the impression that languescens Cab. was based on having no ocelli. It is obvious from Cabeau's latin description that the ocelli are of no importance since they are not mentioned, only in his longer French one does he add this fact. His form was a colour one - brown with a greenish tint. Lempke is wrong in taking sublanguescens a synonym of languescens, Pionneau says nothing about it being of a different colour from typical, it is therefore a synonym of hyperantella Strand.



ab. hyperantoides Strand. Arch. Naturg. 1919. 65. 78. 16.

The underside of the forewings showing only one ocellus, the hindwings on the underside with the normal three.

ab. pseudohyperantus Strand. Arch. Naturg. 1919. 65. 78. 16.

The upperside of forewings showing only one visible ocellus, the hindwings on the upperside with one clear ocellus.

ab. hyperophthalmus Stauder. Ent. Anz. 1921. 4. p. 35.

On the upperside of the forewings there is a third ocellus distinctly showing through from the underside and weakly centred. The hindwings also show a third ocellus, usually three. All the six ocelli of the upperside are white-centred.

ab. supra-albimaculata Boldt. Ent. 1. 1936. 45. p. 460.

Male in which two snow-white spots appear on the upperside of the hindwing in place of the normal black ones. They have no surrounding ring, the upper one is very small but quite visible.

ab. pseudocellatus Bergian. Mosses. Mitteldeutsch. 1952. 2. p. 158. pl. 45. f. 55.

On the upperside of the wings strikingly developed ocelli. In the figure three on forewings and two on hindwings.

Apparently larger and more striking eyes than in hyperophthalmus Stauder (above).

ab. semi-albescens Tutt. Ent. Rec. 1908. 20. p. 247.

Forewings on the upperside only dark at their bases, becoming paler toward the margins, where they are almost white.

Almost certainly a pathological form.

ab. minor Fuchs. Jahrb. Nass. Ver. Nat. 1884. 44. p. 215.

= bioti Oberthur. Etudes 1884. 9. p. 17. pl. 1. f. 1.

Smaller and narrower.

Oberthur's description is little different from that of the typical form but he says "like hyperantus but smaller" so it is placed here.



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1.

selone Schiffenauller. Ann. Verz. 1775. p. 511.

aberrational forms etc.

ab. alba Lienard. Mem. Soc. Philom. Verdun 1850. 4. p. 392.

= pallida Spuler. Schmiedt. Eur. 1901. p. 26.

= flava-pallidus Frohawk. Vars. Brit. Butts. 1938. p. 55. pl. 12. f. 1.

The ground colour silvery-white.

ab. plesiensis Jesatko. Acta. Soc. Ent. Bohem. 1944. 41. p. 146.

The ground colour of all wings white with a brownish tinge. On the upperside of both wings, the band, as well as the inner marginal row of lunules, and the inner marginal band, are dark brown instead of black. The rest of the spots are extended and deep black. On the underside the wings are similarly scaled but on the hindwings the normally pearly spots are pure white.

The description is long and rambling and does not make sense, the main characters would seem to be the pale coloration and extended spots, and the pure white spots on the underside.

ab. flavescens Lompe. Tijdschr. Ent. 1956. 99. p. 158.

Ground colour of the upperside yellow-brown, therefore strikingly paler than normal.

ab. pallida-parvipunctata Oberthur. Lep. Comp. 1923. 20. p. 299. pl. DLKIII. f. 4854.

The ground colour pale straw, hindwings slightly richer. Forewings with median spots absent and only two black bars on costa and a row of antemarginal and marginal spots remaining. The hindwings also lack the median row of black spots.

ab. fulva Gillmer. Int. Ent. Z. 1907. 1. p. 115.

The upperside completely brown, the underside with a violet shimmer.

ab. senipallida Nesslering. Notul. Ent. 1925. 5. p. 97. Abb.

The ground colour of the forewings very pale but the hindwings are darker than normal since the pattern is more extensive.

ab. decolorata Oberthur. Lep. Comp. 1923. 20. p. 299. pl. DLKIII. f. 4853.

Almost certainly the albino form found in most British Argynnis. The figure shows the ground colour normal, all the black spots replaced by dull greyish.

ab. berolinensis Reuss. Int. Ent. Z. 1916. 10. p. 20.

Female form with dark reddish-violet ground colour, further darkened by black dusting, the pattern being normal but heavier.

ab. bernhardi Schulze. Dtsch. Ent. Z. 1918. p. 168. fig. 1916. pl. 4. f. 5.

The pigment is black instead of yellow, especially on the forewings, it is not like marphisa or intermedia. The figure shows the forewings darkened but not black, they appear to be black-dusted.

ab. veta Motschulsky. Zt. Ent. 1852. 1. p. 68.

Almost entirely black on the upperside. On the underside, in place of the normal silver markings, there are longitudinal bands of blackish green.

ab. intermedia Spangberg. Lep. Anteckn. 1876. 1. p. 26.

Upperside of all wings black with yellow marginal spots. Underside black to beyond middle, the forewings with yellow-spotted border, the hindwings black, with a median oblong spot and marginal triangular spots silver, the median fasciae either rudimentary or obsolete. Before the margin the colour is pale fuscous-brown.

This is the original description from the latin. The upperside is similar to the preceding veta but on the underside very different.





ab. *nigricans* Oberthur. Lep. Comp. 1923. 20. p. -99. pl. XLIV. f. figs. 4857 & 4858.

The two specimens mentioned and figured, are both black-brown on the upper side of all wings with the exception of an orange-brown marginal band which is cut by black-brown streaks or rays which extend along the veins. The second figure is different from the first, the rays being much longer and more striking. On the underside of the first figure, which must be taken as *nigricans*, the appearance is very different from the second figure. The markings are normal but all the light yellow and silver markings, with the exception of the middle silver spot and silver marginal chevrons, are dulled over with a leaden colour. The forewings are blackened except at the margins.

In the second figure the markings are drawn out into long rays, especially the marginal chevrons which form a series of wedge-shaped, rather long, silver rays. The forewings are not nearly so extensively darkened as in the first figure.

*nigricans* Oberthur is therefore blackish on the upper side of both wings except at the margins which are of normal orange-brown cut by dark neural rays. The underside is normal in the arrangement of the markings but dulled over with leaden colour except the middle silver spot and the normally shaped marginal silver chevrons. In view of this I cannot agree with Lempke that *nigricans* is a synonym of *vetula* Mots. which had on the underside in place of the silver markings longitudinal bands of blackish-green.

ab. *interligata* Cabeau. Rev. Mens. Soc. Ent. Nam. 1919. 19. p. 49.

On the upper side of the forewings the two lowest spots of the median area join together in a streak just above, and parallel with, the inner margin.

ab. *thaliades* Ter Haar. Onze Vlinders 1899. p. 27. (holotype fig. Tijdschr. Ent. 48. pl. 2. f. 10) The original description merely says the black markings of the upper side more or less strongly fused together.

Lempke says the figure in Tijdschr. Ent. 48. pl. 2. f. 10 is Ter Haar's holotype. This shows the black spots of the median area larger and more elongated on both fore and hindwings but hardly fused together. This figured specimen however came from Appeldoorn whereas Lempke says the holotype came from Kollum, so I rather doubt that it is the holotype. Lempke also makes *medionigrans* a synonym but this has a wide well filled-in black band in the median area of the forewings and the hindwings quite normal. I am therefore keeping it separate as a more extreme form as regards banding.

ab. *medionigrans* Cabeau. Lamb. 1930. 30. p. 54. pl. 5. f. 3.

A broad median black fascia or band on the upper side of the forewings reaching from the costa to the inner margin. The hindwings are normal.

The figure shows a clear sharply defined black band with no ground colour appearing in it, the area between the median row of spots and the basal spots being completely filled in with black.

ab. *transversa* Tutt. Brit. Butts. 1896. p. 295.

The black transverse markings of the upper side are larger, broader, more distinctly united into band form.

Presumably the median spots form a thin band transversely across the wings giving a zig-zag appearance.

ab. *e-nigrum* Foltin. Ost. Ent. Ver. 1958. 23. p. 125.

Upper side of the forewings with the pattern of a large letter "E", which faces the base of the wings. The median black band is broadly developed and runs along the inner margin wedge-shaped, towards the base, it is united with the outer margin by an angular spot. In the middle of the band is a broad spot. The rest of the coloration is as in the typical form.



ab. hoffmanni Kieffer. Ent. Jahrb. 1916. 25. p. 194.

On the upperside of all wings the black markings are very broad and slightly flowing together. Underside normal.

The description is too vague to be of great use.

ab. nigromarginata Lambillon. Rev. Mens. Soc. Ent. Nam. 1906. n. 48.

The marginal border of the upperside black and broad, very little festooned on its inner side and ornamented with little round dots of a yellowish-fulvous, not lunules as in the type. The spots and lines feeble.

ab. consuta Cabanau. Rev. Mens. Soc. Ent. Nam. 1922. 22. p. 50. (fig. Lamb. 31. pl. 3. f. 5)

The forewings on the upperside show the three central black costal stripes joined together into one blotch along the costa.

ab. gerda Schultz. Ent. 2. 1908. 22. p. 39.

Upperside of the forewings with the antemarginal black spots uniting with the black pattern of the outer margin in the form of streaks or rays. Hindwings similar. Since the underside is not mentioned it is presumably normal as regards the silver.

ab. semicadmeis Lempke. Tijdschr. Ent. 1936. 99. p. 160.

The submarginal spots on the upperside of the hindwings are connected by black lines with the marginal chevrons.

Similar to the preceding but on hindwings only.

Since the underside is not mentioned it is presumably normal as regards the silver.

ab. striata Lempke. Tijdschr. Ent. 1936. 79. p. 269. (see vol. 99. p. 160 for better description)

The original description says merely "Long ray-shaped marks or lines in place of the normal spots". Lempke later states that the description is not clear and gives a further and better one which says "On the upperside of the hindwings the submarginal spots are lengthened towards the base in the shape of thick black lines and connected with the spots of the discal row."

ab. europaea Verity. Ent. It. 1950. 4. p. 231.

= thalia europaea Esper. Eur. Schmett. 1793. Suppl. 1. p. 20. pl. CVII. Cont. LII. f. 2.

The figure in Esper's Eur. Schmett is very good and shows the upperside with the submarginal spots of both wings connected in streaks with the black of the marginal chevrons, the hindwings with further streaking in the upper or costal area. The main character of the aberration would appear to be the underside which has the hindwings heavily streaked with silver, one of the streaks reaching from the extreme base right through to the outer margin in the median area. The margins are broadly reddish-brown, almost half the width of the wing, and intersected by broad silver rays, the basal half of the wing being yellow with the veins red. The forewings are more normal but there is a series of marginal yellow rays.

Verity in his Ent. It. credits Esper with the name "europaea" but Esper used thalia europaea, to distinguish it from the "foreign Heliconius" which had already received the name of thalia. Since the latter name, being a primary homonym cannot stand Verity says that the "europaea" part of the name must stand as the name for the form and erects it and in his opinion becomes the author of it, Esper actually giving it the name "thalia" with europaea as an adjective, in German he called it the "European thalia". I know of no other author who has called it "europaea" but it certainly requires a new name so Verity is right in supplying one. This form has nothing to do with thalia Hubner which together with thalassius Hubner, belong to euphydryas.

ab. vanescens Cabanau. Lamb. 1920. 30. p. 54. pl. 5. f. 1.

= margostriata Frohawk. Vars. Brit. Butts. 1938. p. 54. pl. 12. f. 2 (not 4 as stated).

On the upperside the submarginal spots are united with the marginal chevrons in streaks or rays but apart from two black costal stripes the rest of the usual spots are absent, or practically so. Both fore and hindwings are affected.

Frohawk has numbered his plate wrongly, fig. 2 represents this form, not fig. 4.



*ab. naphisa* Herbst. *Natursyst.* 1800. 10. p. 105. pl. 270. f. 8-9.

Upperside of the forewings with two rather large black marks at the base, one each in shape, one along the costa and the other, somewhat smaller, along the inner margin. The rest of the spotting is normal except that the two lowest ones of the median row are larger and elongated. The hindwings are entirely black except for a small spot of normal orange in the centre and a row of very small orange spots along the margins. The underside of the forewings shows a black median fascia, not so broad, and the two black basal spots seen on the upperside. Hindwings underside with two black transverse bands, one near the base and broad, the other in the median area and not so broad, the space between the two bands yellow. The outer part of the wing normal with the ordinary silver chevrons.

It is possible that this belongs to *euphrosyne* but most authors include it in *selene*.

*ab. halflantsi* Cabeau. *Rev. Mens. Soc. Ent. Fran.* 1922. 12. p. 17. (fig. Lamb. 10. pl. 3. f. 1.)

Upperside of the forewings with only two costal stripes, and a black spot near the inner margin, the only one remaining of the median row. The two outer rows of marginal spots are united to form short marginal rays. Hindwings all black except for two small spots of normal orange in the middle and a row of marginal yellow-brown ones.

*ab. nigricans-parvimpunctata* Oberthur. *Lep. Comp.* 1945. 20. p. 299. pl. PLMIV. f. 4836.

On the upperside of the forewings there are only two black costal stripes remaining on the median and basal pattern of the wings, but the margins show a very broad black-brown border, a quarter of an inch wide and uniform. Hindwings all black-brown except for a central fulvous patch and a slight area of fulvous at the anal angle.

*ab. extenuata* Cabeau. *Rev. Mens. Soc. Ent. Fran.* 1922. 12. p. 50.

Forewings with the spots in the median area reduced or almost absent.

*ab. chlorographa* Cabeau. *Rev. Mens. Soc. Ent. Fran.* 1912. 12. p. 112. pl. 4. f. 1-2, (see p. 122) = *lucinaacula* Meyes. *Ent. Tijdschr.* 1914. 35. p. 5.

The two lower spaces, or interneural cells, in the median area of the forewings are filled with whitish.

The original description says "hindwings" but it is corrected to "forewings" on p. 122 of the same volume. The figure shows the character on the forewings.

*ab. futura* Reuss. *Int. Ent.* 1. 1929. 22. p. 433. fig.

The figures show the underside of the forewings with the pattern of the hindwings reproduced on them to an extraordinary degree, perfectly symmetrical, and stretching from the inner margin up to the costa is a median chain of silver spots and a yellowish wedge-shaped mark normally seen at the centre of the hindwing margin. This would appear to be the most extreme case of homocorisis.

gen. aest. *selenia* Traylor. *Nou Beitr.* 1851. 6. p. 41. pl. 495. f. 2.

= *angustipennis* Fuchs. *Jahrb. Nass. Ver. Ent.* 1899. 5. p. 1-3.

The small specimens of the summer generation.

Fuchs *angustipennis* were specimens of the small second brood with the forewings narrowed. These would appear to be little different from *selenia* and not worth separation but if narrow-winged specimens are found they can be treated as an aberration of *selenia*.

*selene*

subsp. *insularum* Harrison. *Entom.* 1937. 70. p. 2.

The race from Hebrides. The markings both on upper and underside stand out much more strikingly than in English or European types, the colour is also brighter.



av vingarne ofvan svarta med rödgula kantfläckar  
till till öfver midten svarta; de främre i  
den gulfläckiga; de bakre svarta med aflång  
refläck och aflångt triangelformiga  
silvergänsande kantfläckar; midtelbandet framträder  
dåligt eller knappast märkbart och innanför  
det är färgen ljusare mörkbrun.

Om jag ej kan hafva något mera att tillägga till  
af Dalman i ofvan citerade arbete gifna  
agnosen, än at trigonis borde utbytas mot  
lång-trigonis, har jag här tagit mig friheten att  
delat densamma i oförändradt skick blott lemnat  
svensk öfversättning på densamma. Hvad som  
förelidit mig at den af Dalman beskrifna aberrationen  
är ett namn och anse den såsom egen  
art, är det, att den är en tydlig mellanform  
ellan rinaldus och marphisa. Den liknar rinaldus  
igenom, att de silvergänsande fläckarne i  
vingarnes utkant äro teml. långsträckta, och genom  
bruna långsgående fläckarne, som omgifva nerverna  
i samma ställe. Om marphisa deremot påminner den  
om vingarnes dunkla och mörka färg undertill och  
i öfver delen af bakvingens midt.

cleodoxa. Toute trace de taches argentées a disparu  
complètement; même les ocelles marrons pupillés d'argent  
qui ornent le bord de l'aile chez cleodoxa, manquent ici.  
L'aile entière a un coloris jaune-verdâtre uniforme;  
seulement dans la région submarginale une rangée de taches.

*Argynnis selene* Schiff. ab. Rasciata Schnaider.

1949, Polsk. Pismo. Ent. 19:241

Forma melanotyczna. Tę bardzo ciekawą aberację złowikiem Rzęśnie Polskiej 13. vi. 1940. Posiada ona na obu parach skrzydeł, z wyjątkiem plam przedkrawiec i czarnej plamki nasadowej na tylnych skrzydłach, wszystkie plamy połączone ze sobą w pręgi przyciemniające, przy czym obie pręgi w polu środkowym skrzydeł przedkrawcają się ze sobą w połowie długości w jedną, biegnącą ku brzegowi pachowemu na ~~kształt~~ kształt Y. Z wyjątkiem żółto-białych plamek wierzchołkowych brzeg przednich skrzydeł w górnej swej części przyciemniony, podobnie jak i pole nasadowe skrzydeł tylnych. Drugi podobny okaz ♀ złowik w Brzuchowicach 6. ix. 1941, który jednak nie posiada przyciemnionego brzegu zewnętrznego ~~skrzydeł~~ skrzydeł przednich.

Dnia 23. vi. 1942 zebrałem w Brzuchowicach okaz ♂ *A. selene* Schiff. posiadający dużą, białą plamę w środkowym ~~z~~ tak przedniego, jak i tylnego, lewego skrzydła. Na odwrocie skrzydeł miejsca te są również jaśniejsze. Inny okaz *A. selene* Schiff. złowiony w Brzuchowicach 25. v. 1934 posiada w środku obu przednich skrzydeł jaśniejsze, żółte, niewielkie plamy. Okazów takich nie można żadną miarą uważać za aberacje, ~~te~~ plamy te bowiem są prawdopodobnie spowodowane jakimś wpływem zewnętrznym w czasie przeobrażania się i dają się zaobserwować nieraz, chociaż dość rzadko u motyli przeważnie dziennych.



ab. flavopunctata Strand. Arch. Math. Naturv. 1908. 22. no. 5. p. 20.

On the underside of the hindwings in the middle of the red-brown basal area, instead of a black spot there is a yellow spot.

ab. debrunneata Lempke. Tijdschr. Ent. 1956. 99. p. 159.

On the underside of the hindwings the brown colour posterior of the pale central band, has completely, or almost completely, disappeared.

ab. infraclara Lempke. Tijdschr. Ent. 1956. 99. p. 159.

On the underside of the hindwings all basal spots, the whole central band, and the triangular spots before the hindmargin silvery white. Moreover this colour is present in several cells outwards of the central band. On the underside of the forewings all marginal lunules pale yellow and the same colour is also present in the pale spots at the costa near the apex. The whole underside gives a very pale impression. Upperside markings and colour normal.

ab. infradefasciata Lempke. Tijdschr. Ent. 1956. 99. p. 160.

On the underside of the hindwings the yellow central band with its three silver spots is almost completely suppressed by the ground colour.

ab. obsoleta Curtis. Trans. Ent. Soc. S. Eng. 1933. 8. p. 105.

On upperside of forewings the discal cell is unmarked except for the second spot distad, very small, and the discocellular which is indeterminate, the basal spot in cell 1 feeble. The postmedian row of spots is absent and the costal spots between the normal position of these and the marginal series, very feeble. The marginal spots reduced and the marginal lunules small. Hindwings upperside with basal suffusion slight, the discal spots small, the discocellular pronounced. The postmedian row of spots absent, the marginal lunules small as on forewings.

Underside of hindwings with the normal sub-basal brown band ill defined and the median silver band almost completely obsolete, the silver marks having lost their dark outline leaving the disc with an almost clear area of fawn yellow, growing more suffused with burnt-sienna as it approaches the base. The postmedian silver spots are well developed, the marginal lunules small but silvery.

The description is long and rambling, the main character is the absence of the postmedian row of spots on the upperside of fore and hind wings and weakening of other spots, and on the underside the almost absence of the median band of silver spots.



selene, sketches from originals.



*vansean* Cab.



*Natix europaea*  
Epp.



*medionigrans* Cab.



*underside*



*Natixartsii* Cuv.



*maxillosa* Hbst.



*maxillosa underside*



*nigrans-parvipes* St. Sp.



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*euphrosyne* Linnaeus. *Syst. Ent.* 1778. 10. 1. 181.

aberrational forms etc.

ab. *pallida* Spuler. *Schmett. Eur.* 1901. 1. p. 27.

= *niveola* Stichel. *Berl. Ent.* 1. 1908. 55. p. 80. pl. 3. f. 4.

Spuler gives the German word for 'White One' as the description. This, coupled with the fact that in *selene* his *pallida* was white, makes it safe to assume that this is also white. Stichel's figure of *niveola* is dull whitish.

ab. *albinea* Lambillion. *Rev. Mens. Soc. Ent. Fran.* 1898. p. 17.

= *xanthos* Frohawk. *Vars. Brit. Butts.* 1938. p. 59.

Pale yellow-ochre, somewhat whitish.

Frohawk's description says almost pure white so it cannot be included in the truly white forms, it would appear to be intermediate between the white *pallida*. Spuler and the following ab. *straminea* Frohawk which is pale ochreous, straw, or golden.

ab. *stramineus* Frohawk. *Vars. Brit. Butts.* 1938. p. 59.

= *pallida* Oberthur. (non. *procc. Tul. Lep. Comp.* 1913. 40. p. 299. pl. DLXIII. f. 4851.

Pale ochreous ground colour.

Oberthur's *pallida* was straw or golden, his name however is preoccupied by Spuler. This form is therefore not whitish as the two preceding.

ab. *luteus* Frohawk. *Vars. Brit. Butts.* 1938. pl. 13. f. 1.

Wings pale orange-yellow, more yellow at the margins which on the hindwings are almost white. The markings are present but weak in colour, hardly darker than the ground colour except on the hindwings where some spots near the anal angle are grey and more defined.

Probably not a genetic form.

ab. *extincta* Hellweger. *Gr. Schmett. Nordtirols.* 1914. p. 143.

All the black patterning completely faded, hardly darker than the ground colour and similar to ab. *extincta* Hebel in *Arg. niobe*.

ab. *albomaculata* Goodson. *Entom.* 1959. 52. p. 146.

Albino. All black patterning replaced by pale silvery-grey on normal ground colour. It is similar in appearance to ab. *albomaculata* Goodson, a coloured figure of which can be seen in Frohawk's *Hist. Brit. Butts.* pl. 13. f. 17.

ab. *chlorographa* Cabeau. *Rev. Mens. Soc. Ent. Fran.* 1940. 40. p. 21.

On the forewings in the lower cells of the median area are two patches of whitish-yellow.

ab. *hola* Hummel. (in Tutt.) *Brit. Butts.* 1896. p. 301.

The true reference to this form seems to be wrapped in mystery, even Verrill in his *Farf, Ital.* gives "Hummel in Tutt."

Tutt says "a very dark blackish-brown form with a marginal row of paler blotches on the outer margins of all wings."





ab. interligata Cabeau. Rev. Mens. Soc. Ent. Fr. 1919. 19. p. 49.

The two lowest black spots above the inner margin of the forewings are united to form a black streak, parallel with the inner margin in the median area.

ab. transversa Vorbrodt. (as transversa Tutt). Schmett. Schweiz. 1911. 1. p. 58.

= transversa Nordstrom. (nom. coll.). Ent. Tidskr. 1933. 54. p. 173.

The black spots of all wings forming a zigzag line in the median area, Vorbrodt is crediting Tutt with the authorship but Tutt described the form only in salene. Tutt's description was a little different - the black transverse marks larger, broader, more distinctly united into a band.

Nordstrom gives the name as a collective one for various species of Argynnis, the description would therefore be the same as Tutt's.

The form has no wide band through the union of spots of the median band with those of the basal or postmedian lines of spots, the median spots are merely larger and thus connect with each other transversely.

? ab. fasciata Blachier. Bull. Soc. Lep. Gen. 1910. 2. p. 52. pl. 1. f. 6. (in niobe)

Verity wrongly includes this under euphrosyne, Blachier headed his article niobe ab. fasciata (nov. ab.) and gives a figure of niobe with the banded character, merely citing other species of Argynnis which show it. If the name is used it would have to be under Verity's authorship but the form is already described under euphrosyne in the following, ab. pittionii Witsche.

ab. pittionii Witsche. Verh. zool.-bot. Ges. Wien. 1926. 74-75. p. (17).

= vittata Nordstrom. Ent. Tidskr. 1933. 54. p. 173. pl. 5. f. 11.

Upperside of the forewings with a well developed black band in the median area stretching from the costa to inner margin. The hindwings black from the base to the median line of spots.

Nordstrom named the same form in the subsp. septentrionalis.

ab. ovalis Hackray. Lamb. 1933. 36. page opposite plate. pl. 6. f. 8.

= basiovalis Verity. Farr. It. 1950. 4. p. 236.

The figure, which is of Hackray's type shows the lowest basal spot of the forewings just above the inner margin, forming an elongated oval mark, its centre being of normal ground colour. Hackray's description is wrong if compared with the photograph he says the lowest "median" black spot is the one affected as in ab. ovalis Cabeau of A. aglaia (Lamb. 30. p. 179.). In aglaia it certainly is the median spot above the inner margin which is affected but in euphrosyne it is the one nearer the base as shown in the photograph of the type in Hackray's own collection. Verity takes the opposite view, accepting Hackray's description and renaming the figure, even though it is of the type. To clinch matters, the figure is named before the description so basiovalis Verity is a synonym.

ab. tatrixa Higner. Ann. Mus. Hung. 1906. 4. p. 502. f. 13.

Forewings with the median spots extended into a broad black band and in the basal area a rather large black blotch, composed of three large black spots in the cell and a further one just beneath them. Hindwings with the basal half black as far as the median row of zigzag spots, except for a few small spots of ground colour.

ab. rabesina Cabeau. Rev. Mens. Soc. Ent. Fr. 1922. 22. p. 1.

On the hindwings the basal half is filled in with black except for a small yellowish point in the cell.

ab. radiata Spuler. Schmett. Eur. 1901. 1. p. 27.

The description is merely the name in German for the radiated one, quite useless and should be treated as a nomen nudum. Apparently given as a name for all forms showing radiation of united spots.



ab. *conducta* Nordstrom. Ent. Tidskr. 1953. 34. p. 173. pl. 5. f. 12.

The forewings more or less normal, the postmedian spots perhaps a little elongated. The hindwings with the postmedian row of spots well elongated, some of them uniting with the submarginal ones to form rays.

vol. 7. pl. 3. f. 1.

ab. *capronnieri* Derenne. Rev. Mens. Soc. Ent. Fr. 1922. 22. p. 36. (Fig. Ann. Soc. Ent. Belg. 1922. 19. p. 10. pl. 1. f. 1.)  
The forewings more or less normal. On the hindwings the submarginal and marginal spots are united to form black rays each of which is enclosed in an oval frame of ground colour, the upper three rays near the costa are much longer than the lower ones. The basal half of the wings is black in the lower half, the upper half being without markings and of normal ground colour. The hindwings underside shows the red basal band absent, replaced to some extent by silver, the chain of yellow squares, normally next to the red band, are not defined, there being a diffused median area of yellow with an elongated silver stripe running from the discocellular almost to the margin, not quite reaching its opposite silver spot. The marginal silver spots are all elongated pointing towards the base. (See fig. of upperside, at end of notes)

ab. *rinaldus* Herbst. Ent. Syst. 1800. 10. p. 108. pl. 271. f. 1. f. 2.

= *thalia* Hubner. (prin. von Linn.) Beitr. 1790. 2. (-). p. 36.

Placed as a form of *colona* by many authors but to me it is obviously a *euphrosyne*. Verity in his Tarf. It. 4. p. 232 also states this view, saying that it is much more likely that both *thalia* and *rinaldus* belong to *euphrosyne* and that they are most probably figured from the same insect. There is an almost identical specimen figured in both both Brit. pl. 36. f. 3.

The figures show the upperside with the marginal lunules filled in with black and well-developed especially on the hindwings. The forewings show rather thin marginal rays and the hindwings have the basal half black, with with an orange discoidal mark. From this black area in the upper part of the wings there are two or three black rays or streaks stretching out towards and reaching the marginal black lunules, in the lower half the submarginal black spots are wedge-shaped. On the underside the forewings have most of the spots thin and small except the marginal ones which are in the form of rays. The hindwings have the basal half yellow, the outer half reddish-brown with striking thick rays of silver, the central one linking up with the central silver spot. See sketch of upper and underside at end of these notes.

ab. *forstorpensis* Strand. (Nordstrom) Ent. Tidskr. 1927. 48. p. 56. (Ent. Nachricht. 2. p. 4.)

Named from the figure in Ent. Tidskr. 36. p. 20. This shows the marginal spots of the forewings uniting with the submedian spots to form rather irregular rays or streaks, the rest of the spotting somewhat irregular and at the base of the wing the three costal spots are united into one large black blotch. The hindwings all black except for oval spots of ground colour along the margins, each containing an elongated black stripe, those nearest the costa linking up with the blackened basal part and therefore less definitely contained in the ovals.

There is much confusion over the reference to this form. Strand was evidently under the impression that it had been published in Zool. Zentralblatt in 1916 as stated

by Nordstrom in Ent. Tidskr. 48. p. 56. on Strand's authority. The manuscript however was never published so the name dates from 1927. See sketch at end of these notes.

ab. *slegersii* Lambillion. Rev. Mens. Soc. Ent. Fr. 1903. p. 10. pl. 2.

Forewings with the median line of spots almost absent and with only two black spots on the costa. The submarginal spots are elongated inwards, wedge-shaped, almost reaching the position of the median absent median spots, and the usual marginal lunules are only slightly indicated the black spots being joined into a transverse black border. Hindwings almost entirely black, only traces of fulvous in the internodal spaces along the margins with a black spot in each of the fulvous patches. See sketch at end of notes.

ab. *nigricans* Oberthur. Lep. Comp. 1923. 20. p. 30a. pl. DLXIII. f. 48j.

= *lecharlesi* Varin. Mat. Pap. 1953. 6. p. 233. pl. 4. f. 2.

Upperside of the forewings from base to median line black with some irregular traces of ground-colour, the margins with neural black rays and a submarginal row of spots. Hindwings completely black except for spots of fulvous at the margins. See sketch. The figure of *lecharlesi* is almost identical.



9

Fig : 45b.

na

... clear area & Mars yellow growing no suffused with burnt sienna as it approaches the base. To compensate for this the usual post medial series & silvery marks are well developed: those in cellules 1, 1b, and 2 are strongly silvery conjoined and internally edged dark brown; those in cellules 5, 6 and 7 are very silvery but of normal size. The marginal series & spots is strongly marked, ~~but~~ the in cellules 2, 5 and 6 being light ringed against a very solid background & burnt umber; marginal black lunule small and the ~~apical~~ ~~apical~~ instead of the

6/

Bis jetzt ist die Rasse hauptsächlich in Kilpisjärvi (L) innerhalb der Birkenregion am westlichen Abhang des Saana-Fjells und auf Malla gefunden worden. Ausserdem wurde in Hetta in Enontekiö und in Onnela (Utsjoki), ein weibliches Ex. angetroffen. Im nördlichsten Finnisch Lappland dürfte die Rasse jedoch eine weitere Verbreitung zu haben. Ganz deutliche Annäherungen an diese Rasse wurden so von uns in Onnela (Utsjoki) und in Petsamo gesammelt.

Die neun erbeuteten Exx. haben 31-37 mm. Sp. w., 4 ♂♂ 31-35, 5 ♀♀ 34-37 mm und sind zwischen dem 3. und 17. Juli der Jahre 1930, 1936, 1938 und 1943 gesammelt.

Leider ist das in Kilpisjärvi erbeutete Material zu geringzählig um einen zuverlässigen Schluss über das Frequenzverhältnis dort zwischen den Rassen hyperlo und hela zuzulassen. Wirklich typische hela-Exx. habe ich in dem zur Verfügung stehenden Material aus ~~Kilpi~~ Kilpisjärvi fast gar nicht feststellen können.

*Argynnis adippe* ab. *klinzigi* Niculescu.

1961, Bull. Soc. Ent. Mulhouse : 46 Fig.

Cette aberration Drösante un mélanisme très

ab. melanotica Spuler. Schmett. Eur. 1901. 1. p. 47.

The description is merely "The blackened one" in German, and may be considered also a nomen nudum. It presumably was meant to cover all extreme melanotic forms.

ab. edna Lobb. Ent. Rec. 1955. 65. p. 56. pl. 3. f. 4-5.

Forewings black from the base to the median row of spots, the spots being contained in the black. A small fulvous mark in the discoidal cell, the submarginal spots very indistinct and the margins showing short rays. Hindwings entirely black except for a series of pale orange sedge-shaped rays, most uniform in shape, along the entire margins.

ab. pauca Futt. Brit. Butts. 1896. n. 300.

On the upperside the markings are reduced to a minimum, often more or less obsolete at the margins.

ab. parvipunctata Oberthur. Lep. Comp. 1923. 10. p. 92. pl. XLIII. f. 1853.

Forewings upperside with all the basal spots absent, only two black stripes on the costa remaining in this area. The submarginal row of spots is present with the normal row of marginal lunules, the median row is completely absent. Markings similar. The name is somewhat misleading, parvipunctata being usually given to specimens with the spots merely small, not absent.

ab. minor Xsionchopolsky. Verh. Ges. Ent. Poln. 1911. 8. Ser. 3. 34.

= euphrosynella Cabeau. Rev. Mens. Soc. Ent. Fr. 1924. 24. p. 34.

Very small specimens below 34 mm.

ab. galiseri Miculescu. Comun. Acad. ep. rom. 1957. 7. 4. n. 476. fig. 456.





ab. *obsoleta* Tutt. Brit. Butts. 1896. p. 399.

On the underside the silver spots are absent.  
Presumably the upperside is of normal pattern.

ab. *plumbea* Cockayne. Ent. Rec. 1924. 36. p. 8.

On the underside the silver spots are replaced by dull leaden.

ab. *atarmarginalis* Frohawk. Vars. Brit. Butts. 1938. pl. 13. f. 5.

On the underside the silver spots are replaced by black.

ab. *flavopunctata* Nordstrom. Ent. Midstr. 1933. 54. p. 175.

On the underside in the rufous basal area there is a yellow spot in place of the normal black one.

Nordstrom gives this as a "collective name" based on ab. *flavopunctata*. Strand in *A. selene*.

ab. *dorensis* Reul. Rev. Fr. Lep. 1950. 12. p. 214.

On the underside of the hindwings the reddish colour is practically over the whole surface; the submarginal silver spots however remain normal. The silver spot at the end of the cell is slightly reddish, its shape at the base so invaded that its pearly tint is slightly tarnished. The median series of yellow cells is almost obliterated and appears to be pushed inwards towards the base of the wing so that the submarginal area appears lightly enlarged. The yellow cell between Sc and R is still quite light though still well defined by two black accents, and the light submarginal area between Sc and R<sub>1</sub> is hardly marked.





ab. *forsteri* Shod.



*steyeri* Lamb



ab. *rinatus* Hbst.



*rinatus* underside



ab. *copriomari*



ab. *nigricans* Od.



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Charlotta. Haworth. Ent. Brit. 1863. 1. p. 30.  
= Agrotis Linnaeus. (Synonyma Linnaei. 1760. 1. p. 4. 2. p. 11.)

### Nomenclature. —

The name Agrotis Linnaeus, used for so long, is now almost entirely obsolete. It was long ago as 1835 (Entom. 18. p. 186) since it is a primary homonym, Linnaeus having used it for a species of Pteris on a previous page of the same work. Prior to this not being accepted, the Pteris of 1835, the Agrotis of 1835, must be dropped. The next valid name for the species is Charlotta. This is unfortunately an abbreviation but it must stand as the name of the nominotypical race from England. Having retained the name of the race (the Agrotis of Linnaeus) Linnaeus. Verity says that since Charlotta is a derivative the subspecific name emilioe might be used in conjunction with it to point out that it is the race from Britain and not from the Linnaean locality of Sweden, but this is not necessary.

The name emilia (quasi) Hübner. Rev. Ned. Tijds. 1. p. 162, is also before that of Haworth, cannot be used since it is also a primary homonym (emilia Drusus). For further information see Ent. Mon. Mag. 7. p. 46. and p. 18-21. Also Ent. Brit. 1863. 1. p. 155-160 by Haworth.

Charlotta. Haworth. Nomenclature form —

Upperside of the forewings with four costal spots, not five, the hindwings together. The underside of the hindwings with 19 silver spots instead of the normal 21, those at the base forming three large silver spots, three times the size of the normal ones. *Haworth's specimen is figured in Sowerby's Brit. Misc. 1804-6. pt. 11.*

Charlotta.

emilioe Verity. Ent. Brit. 1863. 1. p. 157.

Verity describes this race as lying between Charlotta and Pteris. It is found in the Thores and includes Southern England in the race. This is not the case since the Charlotta is the nominotypical race, from Southern England.

Charlotta.

septica Fabricius. Entom. 1793. 76. p. 198.

Described as the subspecies from Scotland, differing from the Scandinavia race by its larger size, heavier black markings in the male and darker green underwings with greater prominence of the silver spots. The female usually very dark, with whitish subterminal spots, but only in the line of both wings, whereas forms however being practically black. Type from Scotland.

It is doubtful if this is a constant race, our specimens seem little different from many English ones. The very dark examples are named ab. suffusa. But this can be found in Southern England as well as Scotland.

ab. flavescens Tutt. Brit. Butts. 1896. p. 291.

= aurantiaca Reuss. Int. Ent. 1. 1916. 10. p. 30.

Male with the usual ground colour replaced by distinct orange tint.

Reuss aurantiaca had the ground colour light gold-yellow. This may be similar to Tutt's flavescens but it is difficult to draw a line unless the type are seen.





*ab. pallida* Tutt. Brit. Butts. 1896. p. 291.

Female with the upperside whitish or pale straw, except the costal area of wings, and a greenish tinge along the inner margin.

*ab. aurea* Tutt. Brit. Butts. 1896. p. 291.

Female with the upperside orange-brown, yellower than the normal female.

*ab. albicans* Dietrich. Mitt. Schweiz Ent. Ges. 1867. 2. p. 334.

Upperside white but the base of the hindwings tending towards yellow-red.

*ab. argentea* Austin. Ent. Rec. 1890. 1. p. 11.

The ground colour quite silvery.

A vague description which may or may not be the white form.

*ab. albosceus* Verity. Entom. 1904. 37. p. 55.

The ground colour white.

*ab. jurassina* Rougement. Le Nouveau de Sapin 1871. (June).

The upperside frosted with green as in *ab. valesina* of *A. paphia*.

Possibly the same as the following *ab. suffusa* Tutt.

*ab. suffusa* Tutt. Brit. Butts. 1896. p. 291.

Female with the upperside basal area blackish fuscous, the black spots larger and shaded externally with fuscous. The ground colour of the costal area and the outer row of marginal spots very pale whitish-ochreous.

Tutt likens the form to *ab. valesina* of *A. paphia*.

*ab. susanna* Stephan. Ent. Anz. 1924. 4. p. 51.

The upperside of the hindwings with a large white round area on which the black spots stand out like eyes.

*ab. albomaculata* Rebel. Berge's Schmett. 1910. p. 33.

= *molybdina* Newnham. Entom. 1917. 50. p. 207 and 230.

Albino. The black patterning of the upper and underside replaced by silver-grey.

*ab. ovalis* Cabeau. Lamb. 1930. 30. p. 179. (fig. vol. 39. pl. 5. f. 1.)

= *ocellata* Eisner. Zool. Meded. 1942. 24. p. 123.

On the upperside of the forewings the black spot at the bottom of the median row, just above the inner margin, is elongated and joins up with another spot nearer the base forming an oval black spot but with normal orange ground colour in its centre, i.e. a black ring or ocellus.

*ab. duplicata* Eisner. Zool. Meded. 1942. 24. p. 123.

On the upperside of the forewings the last but one, of the spots in the median row, is doubled or duplicated.

There is usually a tiny black spot present on the basal side of this spot, presumably it is enlarged to a respectable size making two similar large black spots.



ab.transversa Lempke. Tijdschr.Ent.1956.99.p.175.

On the upperside of the forewings the black spots of the median row are connected with each other along the nervures so that a black transverse line results.

ab.fasciata Blachier. Bull. Soc. Lep. Gen.1910.2.p.53.(see South Butts.pl.61.f.5)  
The black spots of the median row of the upperside confluent or coalescing, forming a black band on all wings.

It is doubtful if Blachier intended to actually name this form which is analogous with his ab.fasciata of A.niobe, but Verity in his Farf.Diurn.It.4, accepts it so it is included here. Blachier cites the figure in South Butts.Brit. Isles pl.61.f.5 as an example which shows the spots of the median row very much enlarged and united, forming a well defined black median band, not merely a zig-zag line as in the preceding transversa Lempke.

ab.cadmeis Lempke. Tijdschr.Ent.1956.99.p.175.

On the upperside the postmedian spots are connected with the subterminal ones (the chevrons). Underside normal.

ab.pluriradiata Verity. Farf.Diurn.It.1950.4.p.301.

= radiata "?" Holik. Lamb.1937.37.p.92.pl.4.f.1.

Verity names this form figured by Holik who apparently thought it had been named radiata but placed a query after it. Verity rightly or wrongly gives it a definite name.

The figure shows the forewings upperside with the median row of black spots very small and the subterminal ones somewhat suffused and elongated. The hindwings show long black neural rays stretching up from the margins and reaching the median row of black spots. The upper spots of the subterminal row are absent, thus making the rays stand out even more prominently.

ab.suffusa Frohawk. (nom.preoc. Tutt.) Vars. Brit. Butts.1938.pl.35.f.1-2.

Upperside of the forewings from the centre to the base black, except for a patch of normal colour on the costa near the base, the base itself being normal brown-orange. This black area forms a rough triangle, starting at the costa centre, down to the inner margin, then up again to the costa, thus being widest on the costa. The row of submarginal spots normal but the ground colour slightly suffused with blackish. Hindwings black from the centre to the normally coloured base, the submarginal spots present on a normal ground colour, the top one being elongated into a streak.

ab.nigrescens anon. Le Rameau de Sapin 1871.5.p.22.(See Lempke. Tijdschr.Ent.99.)  
On the upperside of the forewings, from the zig-zag line outwards to the margin, wholly darkened. Underside normal.

I have not seen the original description, this is taken from Lempke who says that the zig-zag line is the postmedian row of spots. I cannot see how this can possibly be right, the postmedian row is straight, the zig-zag row being the median row. The author is anonymous, signing himself only with three asterisks.

ab.wimani Holmgren. Ent.Tidskr.1888.9.p.103.fig.1.

= ater-discus Frohawk. Vars. Brit. Butts.1938.pl.14.f.2.

The figure shows the upperside of the forewings mostly black with one or two small patches of normal ground colour in the median area. The base of the wings more or less normal and the margins with interneural rays of ground colour, the veins forming thick black streaks. Hindwings all black except at the base and margins which are rayed with normal orange. Underside of forewings rather similar to upperside. Hindwings with a row of black spots replacing the silver ones in the median area.

Frohawk's ater-discus is almost identical on upperside and the underside shows some of the median black spots which replace the silver in wimani. The two are too close to separate, to have the type of ater-discus in the A.C.N. Coll.



*ab. arvernensis* Guillemot. Cat. Lep. au Puy de Dome. 1854. p. 37.

I have not seen the original description, Verity in his Far. Diurn. It. says the blackish tint invades, like a network, the upper surface of all wings. The description is of little use, apart from the melanic character.

*ab. robnora* Kershaw. Ent. Rec. 1952. 64. p. 69. pl. 3. f. 15.

On the upperside of the forewings the median spots of the zig-zag line are small and suffused and those of the postmedian row somewhat elongated. The veins at the margin are heavily blackened to form rays which reach to the postmedian line of spots. One of the costal marks, the third from the base is absent. Hindwings all black except at the margins which show a row of oval spots of normal orange ground colour, lengthening as they approach the costa. Underside of forewings almost normal, more lightly spotted. Hindwings similar to *charlotta* Haw. with three large pear-shaped spots at the base and the margins rayed with silver.

*ab. mitchelli* Kershaw. Ent. Rec. 1952. 64. p. 70. pl. 3. f. 16.

Upperside of forewings with the discoidal cell filled in with black from the second costal stipe to the discocellular vein, leaving only a small patch of normal ground between the black area and the first stripe which is normal as is the base. The median area of the wings is blackened, uniting with the black of the cell, forming a broad oblique band, widest in the centre and narrowest just above the inner margin. The postmedian spots, less black in colour, are enlarged, some elongated and suffused, forming as they approach the costa, a cloudy area. The outer margins are suffused blackish, enclosing a transverse row of orange-brown spots, also suffused. Underside of forewings with rayed margins and traces of silver, the rest of the wings black.

Upperside of the hindwings all black with the exception of interneural rays of orange-brown which become longer as they reach the apex. The black area is dusted with long orange scales towards the base. Underside of hindwings similar to *ab. charlotta* Haw., with the three large pear-shaped basal spots and marginal rays in silver.

*ab. obscura* Nickerl. Bohm. Tagf. 1837. 8. p. 21. pl. 1. f. 1.

I have not seen the original description. Lempke says the upperside from the base outwards, completely darkened. The underside normal.

pl. 2. fl. 2

*ab. emilia* Quensel. (primary homonym) Acarbi Trav. Swed., Finland, Lapland. 1802. 2. p. 53. Upperside of forewings fuscous or blackish-brown with fulvous median lunules. Hindwings normal.

The figure shows the upperside of the forewings completely blackish-brown with the exception of two orange patches in the middle of the wings, all that remains of the normal ground colour. The underside is normal.

*ab. viridiatra* Strand. Ent. 3. 1912. 25. p. 253. (from fig. Tijdschr. Ent. 48. pl. 3. f. 2.)

The description says dark coffee-brown on the upperside, lighter at the base, with two small fulvous spots. Hindwings not so dark with three brownish-yellow spots at end of cell.

The figure in Tijdschr. Ent. 48. pl. 3. f. 2. from which Strand named the form, shows the forewings dark brown with an orange spot near the base on costa and a very small second one in the middle of the wings. The hindwings are almost as dark with three orange-yellow spots at the end of the cell which stand out most conspicuously on the dark ground. On the underside of the forewings a dusky powdering covers all except a thin marginal line of normal orange and two spots near the base. The hindwings are completely green except for mere traces of yellowish in the submarginal area near the costa and two very small streaks at the end of the cell. The silver spots on the margin very small.



ab. *nigrans* Newnham. Lep. Church Stretton. List. 1900. p. 126

Very similar to the preceding *viridiatra* Strand but not so extreme. The description says the forewings upperside black shot with green, a few fulvous spots remaining in the disc, another one near the inner margin very faint. Hindwings almost typical.

We have the type in the R. C. K. Coll. here and the description is not altogether correct. The specimen a ♀, is not black, the normal black spots being easily seen on the dusky brown dusting, especially those of the postmedian row. The marginal lunules although very small are still present and rob the wings of the "all black" suggestion of the description. The "few fulvous spots" in the disc form a quite prominent zig-zag band transversely across the forewings. The hindwings are asymmetrical, those of the left side being far darker than those of the right side. The underside differs distinctly from the preceding *viridiatra* which is almost completely green apart from its silver spots, *nigrans* being more or less typical.

ab. *hindenburgi* Schuster von Forstner. Lep. Rundsch. 1928. 2. p. 157.

Fore and hindwings black, so deep that the normal black spots are no longer separated or visible. The underside of the wings also black, the silver spots of the hindwings only weakly discernible.

This is the most extreme form of the melanic group.

ab. *nana* Wheeler. Butts. Switz. 1903. p. 72.

Small examples below 48 mm.

ab. *smirzi* Slaby. Acta. Soc. Ent. Bohem. 1949. 46. p. 68. fig.

Ground colour of the upperside of both wings and underside of forewings light golden-yellow. All black spots replaced by silvery-white ones. Underside of hindwings greyish-yellow with no golden tint, the silver spots normal but the normal green-grey of the underside completely lacking. An example of partial albinism. This would seem to be the same as the albino form *albomaculata* Rebel (see p. 2) but the author says "partial albinism" so I hesitate to make it a synonym.





ab. *infraochracea* Lempke. Tijdschr. Ent. 1956. 99. p. 175.

The ground colour of the underside of the hindwings of a beautiful warm yellow.

ab. *fusca* Tutt. Brit. Butts. 1896. p. 292.

= *neoarctica* Reuss. Soc. Ent. 1922. 34. p. 31.

The underside of the hindwings with the basal half yellowish-fuscous or reddish-fuscous, instead of the normal green.

Reuss *neoarctica* had the usual green parts olive-brown to reddish-brown.

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ab. *aberrans* Lampa. Ent. Tidskr. 1885. p. 20.

The underside with the spots bluish-green instead of the normal silver. The upperside is darkened.

ab. *eridioides* Pflum. Stett. Ent. Z. 1879. p. 157.

The underside of the forewings with a short row of rather heavy and clearly marked silver spots, starting at the apex. Normally they are hardly present.

Underside of hindwings with an outer row of very heavy and almost circular silver spots. Normally these spots are not round.

ab. *clorinda* Sag Bull. Inst. Catalana Hist. Nat. 1932. 2. Ser. 10. p. 114.

I have not seen the original but Verity says the underside of the hindwings has its appearance quite changed by the large silver spots which occupy the basal area and contrast with the green which takes up the rest of the wings as far as the marginal silver spots. The upperside frequently melanic.

Similar to the underside of *charlotta* Haworth but apparently the median row of silver spots on the hindwings is absent leaving only the large basal ones and the marginal ones. The name would appear to be given to underside only, since the author says that the upperside may, or may not, be melanic.

ab. *altha* Thiory-Meig. Ann. Soc. Ent. Belg. 1910. 54.

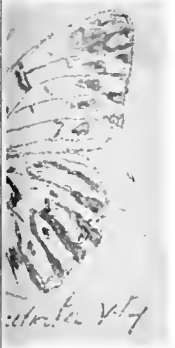
= *hortensia* Riel. Ann. Soc. Linn. Lyon (N. S.) 1911. 58. p. 187.

Underside of the hindwings with three large silver spots at the base. The upperside more or less darkened.

Apparently named on the underside character combined with darkening of the upperside which *charlotta* Haworth does not show.



Charlotte (Aotearoa)





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1. *Argynnis Fabricius.*

*adippe* Schiffermuller & Denis. *Wien Verz.* 1775. p. 177.

aberrational forms etc.

*adippe*

subsp. *vulgoadippe* Verity. *Bull. Soc. Ent. Fr.* 1929. p. 279.

Type from the New Forest. According to Verity this is the subspecies occurring from Sweden, England, and across to the Pyenees and Austria. Differs in its dimensions, the intensity of its ground colour and the amount of green and red on the underside.

ab. *morena* Ribbe. *Iris.* 1910. 23. p. 149.

Female with the ground colour brownish-red instead of the normal yellowish-red, almost as fiery as the male colour.

Described under the race *chlorodippe*.

ab. *berolinensis* Reuss. *Int. Ent. Z.* 1916. 10. p. 24.

Very dark females, the upperside smoky with weakly violet reflections.

ab. *albomaculata* Goodson. *Entom.* 1948. 81. p. 177. (fig. *Froh. Vars. Brit. Butts.* pl. 15. f. 1)

Albino. All the usual black markings replaced by dull silver.

ab. *suffusa* Tutt. *Brit. Butts.* 1896. p. 286.

Upperside of the forewings with the base much suffused and the black spots somewhat enlarged and united.

ab. *fasciata* Blachier. *Bull. Soc. Lep. Gen.* 1910. 2. p. 52.

The median spots of fore and hind-wings coalescing or confluent, forming a band. It is rather doubtful if Blachier actually named this form in *adippe*, he says it is analogous to his *ab. fasciata* in *A. niobe* which is a very strongly banded form, and that similar banded forms occur in *euphrosyne*, *agalais* and *latonia*. Verity accepts them all in his *Farf. Diurn. It.* so it is included here.

ab. *callisto* Cabeau. *Rev. Mens. Soc. Ent. Nam.* 1922. 22. p. 2. (fig. *Lamb.* 33. pl. 10. f. 1-2.)

The median black spots of the fore and hindwings very large and more or less quadrangular, thus dividing the wings into two parts.

The figure shows the spots little larger than normal except the last but one, which is certainly lengthened into quadrangular shape. The form is not a banded one.

ab. *margareta* Stephan. *Ent. Anz.* 1924. 4. p. 50.

Upperside of the forewings with the cell partly filled with black. The submarginal spots unite with the marginal spots in the form of rays, the border itself being black. Hindwings entirely black except for streaks or rays of fulvous ground colour in the margins. Underside of forewings with the cell and interneural spaces in the basal area and disc filled with black, the submarginal spots present to some extent, the reddish-yellow border with no markings at all. Hindwings with the basal area showing three long broad silver stripes, the median area a rusty-brown band composed of spots with traces of Mother of Pearl shading, the margins with elongated silver moons.





ab. klinzigi Niculescu. Bull. Soc. Ent. Mulhouse. 1961. p. 46. fig. p. 47. f. 4 & 6.  
 Accentuated melanism. The reddish-yellow ground colour of the wings reduced to little patches. On the forewings the black submarginal spots are fused with the marginal lunules and the median black spots are much more extended thus reducing the reddish-yellow area. On the hindwings the black area is also more developed, of the normal ground colour there only remains small narrow marginal patches and a transverse row of submarginal ones, broader and oval in shape. The large black basal area contributes to the melanic character. The underside of the forewings typical except that the median black spots are larger and the black submarginal ones absent or almost so. The underside of the hindwings is completely different from the typical form and from ab. cleodoxa, all trace of silver spots is lacking, even the silver pupilled maroon ocelli which are seen in cleodoxa are absent. The entire wings are uniform greenish-yellow, only in the marginal area is there a row of maroon spots bordered interiorly with a complete row of greenish spots. See drawing at end of these notes.

ab. toroki Aigner. Ann. Mus. Nat. Hung. 1906. 4. p. 509. pl. 13. f. 10.  
 The figure shows the forewings black except for an oblong spot of ground colour in cell near costa, the base being of normal colour. The margins are normal but slightly dusky, the veins outlined in black. Hindwings slightly greenish but more or less normal.

ab. bronzus Frohawk. Vars. Brit. Butts. 1938. p. 64. pl. 15. f. 3.  
 Upperside of forewings black except for an oblong spots of normal ground in the cell near costa, and the base, which is of normal colour. The margins not so black as the rest of the wings but the veins heavily dusted with black forming distinct rays. Hindwings dusky, except the basal half (from the median row of black spots) which is bright orange and in striking contrast to the outer dusky half. The marginal moths are also bright orange. Underside almost normal. Very similar to the preceding but with darker hindwings.

ab. varenii Holmgren. Ent. Tidskr. 1888. 9. p. 104. fig. 3  
 The figure shows the forewings with most of the black spots absent. The bar at the end of the cell is present and a faint indication of the submarginal spots, the median spots are only present from the costa down to the middle of the wings. Hindwings with the row of submarginal spots absent.

ab. extincta Bryk. Ent. Tidskr. 1921. 42. p. 146.  
 Upperside of the hindwings with the median band of black spots absent. On the underside this row of corresponding silver spots are not enclosed on the side nearest the base.



ab. infrarufescens Lempke. Tijdschr. Ent. 1956. 99. p. 173.

Underside of hindwings of a unicolorous red-brown with hardly a trace of yellow and with sharply contrasting silver spots. Forewings also browner than normal.

ab. flavescens Eisner Zool. Meded. 1942. 24. p. 124.

Underside of forewings whitish-yellow. Hindwings bright yellow almost without any green, and the brown strongly reduced. The silver spots without gloss. Upperside dull yellow, the black markings reduced.

ab. virgata Tutt. Brit. Butts. 1896. p. 286.

Underside of hindwings with a rusty-brown band situated between the submarginal spots and the central series of silver spots.

ab. intermedia Tutt. Brit. Butts. 1896. p. 286.

= hemicleodoxa Newnham. Lep. Church Stretton List. 1900. p. 126.

Underside of the hindwings with the outer row of silver spots absent, i.e. with no silver. The silver spots at the tip of the forewing are normal.

ab. cleodippe Staudinger. Cat. Ed. 2. 1871. p. 21.

Underside with the silver spots almost absent.

ab. <sup>u</sup>pseudocleodoxa Verity. Bull. Soc. Ent. Fr. 1929. p. 279. (nom. nov. pro. cleodoxa Ochsh.)  
= cleodoxa Ochsenheimer. (nom. preoc. Esp.). Schmott. Eur. 1816. 4. p. 118..

The silver median and marginal spots of the underside replaced by yellow, the submarginal ones with silver centres.

Verity renames the form because Esper used cleodoxa for a form of A. niobe, but under the new rules regarding aberrations, it is not necessary.

ab. cleodoxa-fulvescens Tutt. Ent. Rec. 1908. 20. p. 222.

On the underside the yellow tint which replaces the silver spots in cleodoxa Ochsh., is of a much darker tint of ochreous-yellow.

ab. cuneata Tutt. Brit. Butts. 1896. p. 286.

On the underside of the forewings there is a large wedge-shaped black mark in the centre.

ab. anticopupillata Verity. Farf. Diurn. It. 1950. 4. p. 293. (fig. Lamb. 33. pl. 10. f. 3.)

On the underside of the forewings the two black spots of the submarginal row, the second and third from bottom, are much accentuated, the lower one being pupilled with whitish.







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1. *Argynnis* Fabricius.  
*paphia* Linnaeus. Syst. Nat. 1758. X. p. 481.

aberrational forms etc.

ab. *lutea* Reuss. Int. Ent. Z. 1916. 10. p. 30.  
Females with the ground colour yellow, very bright in appearance.

ab. *rutila* Reuss. Int. Ent. Z. 1916. 10. p. 30.  
Females with the ground colour fiery orange, richer and stronger than the type.

ab. *viridescens* Reuss. Int. Ent. Z. 1916. 10. p. 30.  
Females with the ground colour green in the same places that ab. *valesina* is brownish-grey.

ab. *harmsi* Reuss. Soc. Ent. 1923. 38. p. 26.  
"The falsely called *valesina* male from Königsberg has a beautiful, almost pale blue underside (as well as other characters not mentioned by Lengerken): *Dryas paphia* ab. *harmsi* m. = perfecta, *brunneomaculata*, *luteoalba*, *virideoiridescens*, *suffusa*, *subtuscoerulea*. Androconial distribution 5a(B cu<sub>1</sub>cu<sub>2</sub>) compare normal formulae in my work in Arch. Naturg. March. 1922. Reuss."  
Seitz, Verity, and others, give the reference Arch. Naturg. (1921) 1922. 87. All. p. 210. but I can find no mention of *harmsi* on that page or in the long article by Reuss. The above is merely a footnote relating to ab. *subtuscoerulea* Reuss, the only reference to ab. *harmsi* that I can find. Presumably it shows the characters of all the other forms Reuss mentions.

ab. *cifkai* Silbernagel. Acta. Soc. Ent. Bohem, 1940. 37. p. 77.  
The normal yellow-brown ground colour of both upper and underside has taken on a completely whitish tone, with normal markings. The costa of the hindwings is weakly yellowish dusted. Also, the abdomen is whitish and the strongly haired body is opalescent grey-green.  
Silbernagel says the form is a "total albino" but this is obviously not so, it is only the ground colour affected, not the black pigment of the markings.

ab. *albomaculata* Goodson. Entom. 1959. 92. p. 148.  
Albino. All black patterning is replaced by pale silvery grey on a normal ground colour.

ab. *fontainei* Cabeau. Lamb. 1929. 29. p. 98.  
The whole of the hindwings and apical part of the forewings is of a whitish tint. This form is probably pathological.

ab. *caroffana* Cabeau. Rev. Mens. Soc. Ent. Nam. 1923. 23. p. 24.  
An oval white patch on each of the four wings.  
This form is also probably pathological but is quite frequent.



ab.lubbeana Fischer. Soc.Ent.1920.35.p.45. pl. figs.3 & 4.

The figure shows the male with the black spots normally seen at the ends of the veins at the extreme margin, completely absent. The female figure shows these not completely absent but represented by shadowy triangles at the ends of the veins. In both sexes the row of submarginal spots are much larger than usual but the postmedian spots much smaller.

ab.calidegenita Stauder. Iris.1921.35.p.30.

= imperfecta Reuss. Arch.Naturg.(1921)1922.87.AII.p.210.

The apical area, 10 mm. wide, with no patterning.

ab.perfecta Reuss. Arch.Naturg.(1921)1922.87.AII.p.210.

Reuss apparently named this form as having the pattern present as opposed to his ab.imperfecta (synonym of the preceding) which has the apical pattern absent, in which case it is a synonym of the type form and of no use.

ab.confluens Spuler. Schmett Eur.1901.1.p.30.

On the upperside of the wings the two outer rows of black spots unite with each other, forming marginal rays.

An example of this is figured in Bull.Soc.Lep.Gen.3.pl.7.f.4.

ab.pelopioides Krombach. . Int.Ent.Z.1916.10.p.45.fig.

Similar to ocellata, the following, and may really be considered a synonym of it. However it is not so extreme in the marginal area, the outer rows of black spots not being fused together as in ocellata, so it is kept separate here.

Forewings with the black area increased from the median row of spots outwards, so that ovals of ground colour remain before the margins each enclosing a black spot and appearing like two rows of eyes or ocelli. Hindwings with the basal half of normal ground colour and black in the outer half except for longish ovals of ground colour in which the two rows of black spots are enclosed, two spots in each oval. In ocellata these two spots are fused into one. See sketch at end of these notes.

ab.ocellata Frings. Soc.Ent.1902.17.p.35. (not in litt as stated by Verity)

Upperside of the wings with striking longitudinal spots enclosed in one ring of ground colour before the margins which appear like a row of eye spots and caused by the union, or fusion, of the two rows of black spots before the margins. Mainly the form is characterised by the broadening and flowing out of the black markings of the central area which may vary in its intensity.

Frings cites the figure in Berl.Ent.Z.1888.32.pl.7.f.1. as an example. This shows a form extremely like pelopioides, the preceding, the main difference being that in the ovals of ground colour before the margins there is a longitudinal stripe formed by the fusion of the two spots which in pelopioides are separated.

See sketch at end of these notes.

ab.conjuncta Schawerda. Verh.zool.-bot.Ges.Wien.1905.

The black spots of the upperside fused.

The description is not sufficient to attach to any particular form, it can be used for any fusion of spots not covered by other described forms.



ab. nigricans Cosmovici. Le Nat. 1892. p. 256.

= melaina D'Aldin. Lamb. 1931. 31. p. 82.

The description is somewhat vague and lacking in detail. The forewings and hindwings are black as far as the marginal spots which touch themselves. This probably means that the two rows of marginal spots are fused together, the black area reaching, then giving the appearance of a practically black wing with lighter spaces in the margins so that the fused spots can still be seen.

D'Aldin's melaina is so similar that it can hardly be separated. The figure shows all wings black with a row of spots of a lighter shade, followed by another row of smaller less defined spots, in the margins, those of the hindwing being rather more developed. These spots, although rather oval in shape contain no black centre as in ocellata Frings.

D'Aldin was evidently under the impression that this form had been named by Morton but in Lamb, 31 p. 82 states that it is "ab. nov" and gives it the name himself. Morton figured it in Ent. Mon. Mag. 1898. pl. 1. but did not name it.

ab. sylvia Fischer. Soc. Ent. 1914. 29. p. 81.

Upperside of all wings uniformly black, except the base and a very narrow marginal band. 1 mm. in breadth, and two or three intercosta streaks of brown in the apical area.

Another similar form to the preceding but until the types of these various melanics can be seen it is impossible to tell if they are different from each other.

ab. backei Unterberger. Ill. Wochenschr 1907. 12. p. 521.

All the black spots fused together, darkening the whole of the upperside, only the base and two spots on the hindwings, contracted, being of normal colour.

Most authors make this a synonym of nigricans Cosm. but the description makes no mention of any lighter marginal spots so it would appear to be the blackest of the melanics.

ab. joannis Cabeau. Rev. Mens. Soc. Ent. Nam. 1922. 22. p. 33.

Forewings black except base and a costal spot in the cell, the apical region normal but the margins divided by black-dusted veins. Hindwings with the median area black the base normal, the outer marginal area of normal colour but divided by black neural rays.

ab. ater Frohawk. Vars. Brit. Butts. 1938. p. 23. pl. 4. f. 1-2.

The figure shows a male with the forewings upperside black, except at the base and outer margin which is normal in colour but heavily rayed with black. Hindwings entirely black, the margins not so intense, orange-black, and divided by deep black still giving a rayed appearance.

Very close to the preceding but with more extreme hindwings.

ab. huhsti Reuss. Soc. Ent. 1923. 38. p. 26.

Reuss created the name for somatic mosaics, i.e. specimens which show a different form on part of a wings or whole wings, not bleached patches but definite characters and gives several different examples under the one name. It is hardly possible to include such a variety under this name, each should be termed "somatic mosaic" and the name ignored.

ab. nana Stephan. Iris 1923. 37. p. 42.

= minor Derenne. Lamb. 1926. 26. p. 4.

= pusilla Wnukowsky. Mitt. Munch. Ent. Ges. 1927. 17. p. 71.

Very small specimens,  $4\frac{1}{2}$  cm. wing span.



ab. transversa Lempke. Tijdschr. Ent. 1956. 99. p. 178.

On the upperside of the forewings the median spots are enlarged and coalescent so as to form a continuous zig-zag band, the spots of the hindwings are enlarged.

underside forms --

ab. diluta Spuler. Schmett. Eur. 1901. 1. p. 31.

This shows a faded pattern on the underside of fore and hindwings, in the latter the rows of eyes increase again and so form the original pattern element. Presumably the author is linking this "eyed" pattern of the hindwings with the pattern seen in other species of *Argynnis* which have silver spots or "eyes".

ab. rosea Cosmovici. Le Nat. 1892. p. 256.

On the underside of the hindwings the outer third is rosy, semi-transparent, the spots of the upperside showing through.

ab. subtusaura Reuss. Soc. Ent. 1923. 35. p. 26.

Male with the underside of the wings gold-brown.

ab. immaculata Bellier. Ann. Soc. Ent. Fr. 1862. p. 616.

The underside of the hindwings deprived of the silver bands. Described from Corsica where it flies less commonly than the type form but is not rare. Bellier says it is constant in Corsica, but it is not a subspecies if the type form flies with it.

ab. trifasciata Ragusa. Nat. Sic. 1920. 23. p. 156.

On the underside of the hindwings the silver band on the margin is absent but the three inner silver bands are enhanced.

ab. teresa Agenjo. Z. Wien. Ent. Ver. 1941. 26. p. 86. pl. 8. f. 7.

♂. The underside of the hindwings with the green colour replaced by grey-blue. The moon spots and submarginal spots are similarly coloured and the areas dividing the silver bands between the subcostalis and cubitalis are ochraceous but somewhat washed-out and in the lower half with a grey-blue dusting. The inner half of the submarginal band is somewhat brownish tinted and the silver bands stand out distinctly and show a somewhat reddish-cast, bluish tint, the fringe is yellowish.

ab. marillae Aigner. Rov. Lapok. ... 9. p. 141. (Verh. zool-bot. Ges. Wien. 1903. 53. p. 164)

On the underside of the hindwings the silver bands broaden and fuse so that the whole base and median field is silver without pattern. The band of ocelli greenish





ab. *argyrorrhyses* Alpheraky. Seitz Macrolep. 1907. 1. p. 241. pl. 71 row a.

Underside of the hindwings with the proximal half entirely silver, the outer half normal. The rows of black spots on the upper and underside are reduced, the two external rows only feebly indicated or absent but less reduced in the female. Almost identical, apart from the absent rows of spots, with the preceding ab. *marillae* Aign. and probably a synonym.

ab. *fasciata* Adler Ent. Rundsch. 1916. 33. p. 4.

Underside of the hindwings green with two narrow dark violet bands, one of them marginal, and uniting with the other at the anal angle, the only markings present.

A form of the subsp. *anargyra* Stgr. without the silver stripes.



valesina forms.

ab.valesina Esper. Eur. Schmett. 1800. l. p. 73. pl. CVII. Cont. LXII. f. 1-2.

Female form only in which the normal colour is replaced by bluish or greenish-grey, also of a brownish tint as in Esper's figure, with a whitish area towards apex of forewings.

ab.valesina-alba Reuss. Arch. Naturg. (1921) 1922. 87. AII. p. 210.

Valesina form with the ground colour whitish-grey to whitish-yellow.

ab.valesina-brunnea Reuss. Arch. Naturg. (1921) 1922. 87. AII. p. 210.

Valesina form with the ground colour brownish.

ab.valesina-flava Reuss. ?

Verity includes a valesina-flava among Reuss forms in Arch. Naturg. 87. but I can find no mention of such a form in the long article. See Farf. Diurn. It. 4. p. 307.

ab.valesina-grisea Reuss. Arch. Naturg. (1921) 1922. 87. AII. p. 210.

valesina form with the ground colour grey.

ab.valesina-viridiochrea Reuss. Arch. Naturg. (1921) 1922. 87. AII. p. 210.

valesina form with the ground colour greenish-ochre.

ab.valesina-nigra Reuss. Arch. Naturg. (1921) 1922. 87. AII. p. 210.

valesina form with the ground colour tending to blue-black

ab.valesina-atrox Niepelt. Int. Ent. Z. 1914. 8. p. 144.

valesina form with the ground colour dark olive-brown, the median field black with thick black streaks on the veins as far as the margin on the hindwings, whilst the forewings are completely black except for a light streak at the apex near the costa and the base which is of normal colour.

ab.valesina-miranda Fischer. Soc. Ent. 1914. 29. p. 81.

Valesina form, normal only at the base, especially of the forewings. Deep black, relieved only by two streaks of lighter colour before the apex of the forewings, followed by a row of arrow-shaped lighter spots in the margin which are also seen on the hindwings.

ab.nigrizina Frohawk. N.H. Brit. Butts. 1914. l. p. 69. pl. 12. f. 23 (not 22).

valesina form with nearly all the normal markings obliterated by black, the central discoidal marks of the forewing confluent forming a blotch in deeper black.

The figure shows the forewings black-brown with two costal stripes near the base standing out in much deeper black, and a marginal row of lighter spots. Hindwings also black-brown with lighter marginal ovals in which are black elongated streaks as in ocellata Frings. The base of both fore and hindwings is normal.



## valesina forms.

ab.valesina-eudora Fischer. Soc.Ent.1915.30.p.49.

Normal only at the base. A form of valesina in which all the wings are black except for a yellowish streak before the apex of the forewings.

This would appear to be the blackest form in valesina.

ab.subtuscoerulea Reuss. Soc.Ent.1923.38.p.26.

valesina form with the underside shiny parts blue-green.

ab.valesina-udei Reuss. Int.Ent.4.1926.20.p.24.

valesina form with the underside of a beautiful violet colour without any brownish shade, replacing the normal green.

ab.atroviridis Kollmorgen. Ent.2.1898.11.p.159.

valesina form of the silverless subsp.anargyra Stgr. On the underside of the hindwings the silver bands almost or completely fail. In a few examples the silver totally disappears and leaves dull bone-white or bone-yellow in its place but the outlines remain sharp and distinct. In other examples there remains some somewhat suffused silver on the outlines and a silver gloss extends across the dark green ground colour.

This may be confined to the subsp.anargyra from Corsica but possibly occurs among other races.



A. paphia Linn.

Sketches.



ab. pelopioides Krombach.



ab ocellata Frings.

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